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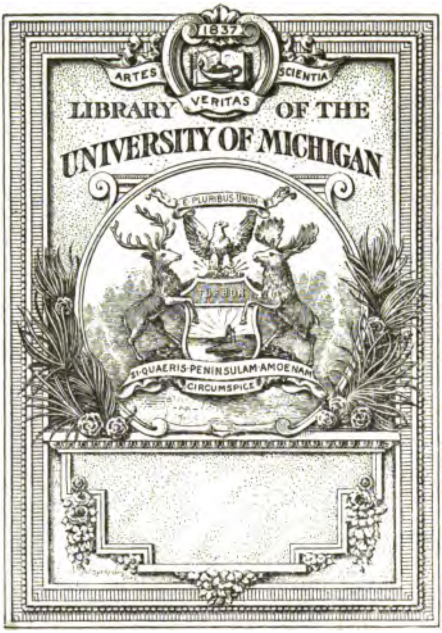

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EIGHTH ANNUAL REPORT

OF THE

State Board of Health

OF

INDIANA,

FOR THE

FISCAL YEAR ENDING OCTOBER 31, 1889.

TO THE GOVERNOR.

INSTITUTED, NOV. 3, 1881

INDIANAPOLIS:
WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING.
1890.

STATE OF INDIANA,
EXECUTIVE DEPARTMENT,
INDIANAPOLIS, January 22, 1890.

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statements.

OFFICE OF AUDITOR OF STATE,
INDIANAPOLIS, January 23, 1890.

The financial part of the within report, so far as it relates to money drawn from the State Treasury, has been examined and found correct.

BRUCE CARR,
Auditor of State.

Returned by the Auditor of State, with the above certificate, and transmitted to the Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

W. B. ROBERTS,
Private Secretary.

Filed in the office of the Secretary of State of the State of Indiana, January 24, 1890.

CHARLES F. GRIFFIN,
Secretary of State.

165553

BOARD OF HEALTH REPORT.

To Hon. Alvin P. Hovey,

Governor of the State of Indiana:

In compliance with Section 4987 of the Revised Statutes of the State of Indiana, we herewith submit our Eighth Annual Report of our "doings, investigations and discoveries" for the fiscal year ending October 31, 1889, together with the Vital Statistics for the year ending September 30, 1889.

It is with pleasure that we are able to report that the health of the people of our State has been unusually good during the year just closed. From all sections of the State comes the cheerful news that doctors have little to do, and that a low rate of mortality prevails. We are confident that this is evidence of better sanitary conditions brought about by the aid of town, city and county boards of health. Still greater progress could be made in this direction if it were not for opposition to the work of health boards from unexpected quarters; that while the great majority of physicians are using their best efforts to advance the cause of sanitation, manifestly against their financial interests, there are a few who oppose the work of the boards of health, offering as a reason therefor that their business is to cure disease, not to prevent it.

The advanced sentiment of the public on sanitation is such, however, that this opposition is rapidly disappearing, and we confidently expect that in a short time it will have entirely vanished. The people are awakening to the fact that a large amount of sickness is preventable by observing some of the well known laws of health, and that it costs less to prevent sickness than it does to cure it.

Within the year the Board made a careful inspection of the State benevolent institutions, prisons, and many county asylums and jails. These were generally found in good condition, in some of which great improvements have been made since our inspections made a year ago. In several counties where old and unhealthy jails and asylums had long been a menace to health, they have been replaced by new ones, built according to modern plans, with due regard for the health and comfort of the inmates.

The Board has received quarterly returns regularly from all the counties except one, Wabash. In this county the Board of Commissioners have refused to pay a county health officer for the work necessary to collect statistics, and report the same to this office.

In all cases where epidemics or contagious diseases made their appearance prompt measures were taken to stamp them out and prevent their spread. These efforts were successful, and in but few instances did they spread beyond the original cases.

The following rules were adopted by the Board, and distributed to the various county health officers, with instructions to have them rigidly enforced:

Rule 1. No person affected with any contagious or infectious disease shall be admitted into any public or private school.

Rule 2. No parent, guardian, or other person, having charge or control of any child or children, shall allow or permit any such child or children to go from any house or building infected with scarlet fever, diphtheria, small-pox, measels, whooping cough, cholera, or other contagious or infectious disease dangerous to public health, to attend any public or private school.

Rule 3. No person shall be admitted into any public or private school who may recently have been affected with small-pox, scarlet fever, diphtheria, cholera, whooping cough, measles or other contagious or infectious diseases dangerous to public health, nor from any of the diseases named, until first presenting a certificate signed by a reputable physician, that all danger of communicating such disease to others is passed, and said certificate is endorsed by the health officer in whose jurisdiction the person may reside.

Rule 4. The county, city and town health officers shall exercise especial hygienic supervision over the schools and school houses within their respective jurisdictions, and where hygienic faults are found, it shall be the duty of said officers to call, immediately, the attention of the school authorities thereto, and see that they have them removed.

RULE 5. Whenever any householder shall know or suspect that any person within his or her family, or who may be temporarily residing with him or her, is sick with small-pox, scarlet fever, diphtheria, cholera, or any other disease dangerous to the public health, he shall immediately give notice to the health officer within whose jurisdiction he may reside. In all cases where diseases dangerous to public health are reported the officer within whose jurisdiction the disease occurs shall at once send one of the "Preventable Disease Circulars" to the infected household.

RULE 6. Whenever any physician shall know or suspect that any person whom he is called to visit has small-pox, scarlet fever, diphtheria, cholera, or any other disease dangerous to the public health, such physician shall give notice immediately, together with the locality and full description of the case, to the local Board of Health within whose jurisdiction the disease or diseases may occur.

RULE 7. It shall be the duty of the attending physician to see that the proper flags of warning, as provided for in Rule 17, under the instruction of the local health officer, be placed in proper position, according to said rule. It shall be his further duty to give all persons affected with contagious or infectious diseases coming under his care, and those having charge or care of them, notice of the rules and regulations of this Board pertaining to all such diseases.

(Copies of these rules and the necessary flags will be furnished to him by applying to the county health officer.)

RULE 8. No parent, guardian or other person having charge or control of any child or children, shall allow or permit any such child or children to go from any house or building infected with small-pox, scarlet fever, diphtheria, measles, whooping cough, cholera, or other contagious or infectious diseases, to attend any church, or public meeting, or place of amusement, or to travel in any street-car or public vehicle.

RULE 9. No person shall be permitted to go from any house or building infected with scarlet fever, diphtheria, cholera, small-pox, or other contagious or infectious diseases dangerous to public health, to attend any church, public meeting or place of amusement or to travel in any street-car or public vehicle.

RULE 10. No person recovering from any infectious disease, dangerous to public health, shall be permitted to appear upon the public streets or public highway, or in any public place, until all danger from contagion by reason of such disease is passed, and a certificate from the local health officer to that effect placed in the hands of those in authority.

Rule 11. The room in which there has been a case of infectious disease dangerous to public health must be thoroughly disinfected immediately, and all infected clothing, bedding, carpets, furniture, etc., either cleaned and disinfected or destroyed. All such work to be done under the supervision of the health officer..

Rule 12. In all cases of death from any disease dangerous to public health, the body shall be placed in a coffin as soon as possible, and the coffin securely closed and never again opened. Public funerals are strictly forbidden.

Rule 13. No person will be allowed to leave any house, or building or premises infected with small-pox, unless he has heretofore had the disease, and then he must make a complete change of clothing, and have a permit and instructions from the local health officer.

Rule 14. Each day brings evidence of the increasing danger and virulence of this loathsome disease, and also increased evidence of the power of vaccination to save from its ravages all persons who avail themselves of its protective influences. It is, therefore, the duty of all unvaccinated persons to be vaccinated immediately.

Rule 15. It is the duty of all persons to protect themselves and the public against small-pox, and in all cases where an exposure to small-pox has occurred, or were an epidemic of small-pox is threatened, it shall be the duty of the Board of Health within whose jurisdiction such exposure shall have occurred, or danger of such an epidemic ensuing to compel a vaccination or re-vaccination of all exposed persons, and any one refusing or failing to comply with such order shall be liable to the penalties of Section 4994, Revised Statutes.

Rule 16. As adopted by the State Board of Health, October 18, 1882:

"All vaccinations must be with *non-humanized virus.* But no such virus shall be bought or sold to be used by physicians in vaccinating except such virus has been taken from the original package, as obtained from the producer of said virus, and such original package of one point or more, or one scab or more, shall be bought or sold in sealed envelopes, having upon such envelopes the name of the proprietor of the farm where the virus is produced, and also the date when such virus was taken from the cow." The only exception to this rule that would be recognized by this Board would be in the event that small-pox was prevalent in epidemic form, and the health officer should certify to the impossibility of obtaining such virus in sufficient quantity, and also as to the purity of the humanized virus to be used in lieu of the bovine virus.

RULE 17. Upon notice being given of cases of small-pox, scarlet fever, diphtheria or cholera, the health physician shall cause a flag, not less than twelve inches square, to be fastened to the front door or other conspicuous place of each building where such sickness prevails. The flag for small-pox shall be red, and shall have printed thereon, small-pox. For scarlet fever and diphtheria, shall be yellow and have scarlet fever or diphtheria printed thereon in large letters. For cholera, a black flag with cholera printed in white letters, shall be used. Any person causing the removal of said flags, without the authority of the local health officer, shall be subject to the penalty as provided by Section 4994, Revised Statutes.

RULE 18. It is hereby made the duty of every person who may have charge of any one who has died of small-pox to cause the body to be interred within twelve hours after the death of any such person. There shall be no public demonstration at the funeral of any person who has died of small-pox, scarlet fever, diphtheria or cholera.

RULE 19. City and town health officers shall record all returns of births, deaths and contagious diseases, and they shall monthly turn over to the county health officer, the original birth, death and contagious disease returns. The county health officer, after recording these original returns, shall return them to the city or town health officer whence they were received, who will preserve them for future reference.

RULE 20. County, city and town health officers shall take cognizance of all violations of the Revised Statutes in reference to diseased animals, and whenever any such are found, at once cause a rigid enforcement of the laws, and they shall in all cases of infectious diseases in animals, occurring within their jurisdiction, render prompt assistance in arresting and stamping out the malady.

RULE 21. All Boards of Health of counties, cities and towns should cause to be made a thorough sanitary survey of their respective jurisdictions, for the purpose of ascertaining the existence of conditions detrimental to the public health, including in such survey swamp lands, stagnant ponds, imperfect drainage, sewerage, cess-pools and water closets; the construction, ventilation and drainage of public buildings, school-houses, prisons, hospitals, eleemosynary institutions, and such nuisances as might prove detrimental to public health.

SUGGESTIONS CONCERNING QUARTERLY REPORTS.

In view of the fact that quarterly reports from county health officers to this office so frequently contain errrors, it is hoped that the following suggestions will be *carefully read and heeded:*

BIRTH RETURNS.

The first column of the birth blank, "number of births," must correspond to the number of mothers, and is the same as "number of children," unless plurality births occur, in which case there are more children than mothers or fathers.

In "grouped ages of parents," care must be taken that the number of fathers and mothers are the same. So also in "nationality of parents." It will thus be seen that "number of births" and number of fathers and mothers should, in all cases, be the same, while the number of children may be greater on account of plurality births.

Please report "still births" on the *birth blanks only* and *not* on the death blanks.

When a woman is delivered of a child at or after the twenty-eighth week of utero-gestation, it must be returned as a birth; under the twenty-eighth week it is an abortion or miscarriage, and does not require a return.

DEATH REPORTS.

Five items are to be considered in filling the death blanks, viz.: Months, color, nationality, condition, and grouped ages of decedents.

The number of males and females must be the same in all the items, *e. g.:* If there are 16 males and 14 females in months, the same must occur in all the other items. Before a report is sent in it should be verified.

The National Association of General Baggage Agents, at their meeting in Detroit in August, 1889, adopted the following "Rules for the Transportation of Dead Bodies," to be put in force throughout this country on and after December 1, 1889. At a recent meeting of this Board these rules were approved and will be enforced by health officers throughout the State.

RULES FOR THE GOVERNMENT

—OF—

STATION * AGENTS * AND * BAGGAGEMEN

—IN—

RECEIVING AND TRANSPORTING DEAD BODIES.

RULE 1. The transportation of bodies dead of Small-Pox, Asiatic Cholera, Leprosy, Typhus Fever, or Yellow Fever is absolutely forbidden.

RULE 2. The bodies of those who have died of Diphtheria, Anthrax, Scarlet Fever, Puerperal Fever, Typhoid Fever, Erysipelas, Measles, and other contagious, infectious, or communicable diseases must be wrapped in a sheet thoroughly saturated with a strong solution of Bi-Chloride of Mercury, in the proportion of one ounce of Bi-Chloride of Mercury to a gallon of water; and encased in an Air-Tight Zinc, Tin, Copper, or Lead-lined Coffin, or in an Air-Tight Iron Casket, hermetically sealed, and all enclosed in a strong, tight wooden box; or the body must be prepared for shipment by being wrapped in a sheet and disinfected by a solution of Bi-Chloride of Mercury as above, and placed in a strong coffin or casket, and said coffin or casket encased in a hermetically sealed (soldered) Zinc, Copper, or Tin case, and all enclosed in a strong outside wooden box of material not less than one inch and a half thick.

RULE 3. In cases of contagious, infectious, or communicable diseases the body must not be accompanied by articles which have been exposed to the infection of the disease. And in addition to permit from the Board of Health or proper health authority, Agents will require an affidavit from the shipping undertaker, stating how body has been prepared and kind of coffin or casket used, which must be in conformity with Rule 2.

Rule 4. The bodies dead of diseases that are not contagious, infectious, or communicable, may be received for transportation to local points in same State, when encased in a sound coffin or metallic case, and enclosed in a strong wooden box, securely fastened so it may be safely handled. But when it is proposed to transport them out of the State to an inter-state point (unless the time required for transportation from the initial point to destination does not exceed 18 hours) they must be encased in an air-tight, zinc, tin, copper or lead-lined coffin, or an air-tight iron casket, or a strong coffin or casket encased in a hermetically sealed (soldered) zinc, copper, or tin case, and all enclosed in a strong outside wooden box of material not less than one inch thick. In all cases the outside box must be provided with four iron chest handles.

Rule 5. Every dead body must be accompanied by a person in charge who must be provided with a ticket, and also present a full first-class ticket marked "corpse," and a transient permit from Board of Health, or proper health authority, giving permission for the removal, and showing name of deceased, age, place of death, cause of death (and if of a contagious or infectious nature), the point to which it is to be shipped, medical attendant, and name of undertaker.

Rule 6. The transit permits must be made with a stub to be retained by the person issuing it, the original permit must accompany the body to destination, and two coupons; the first coupon to be detached by agent at initial point and sent to the General Baggage Agent, and the second coupon by the last Train Baggageman. The stub permit and coupons must be numbered so the one will refer to the other, and on the back of permit will be a space for undertaker's affidavit, to be used in cases of contagious or infectious diseases as required by Rules 2 and 3.

Rule 7. The box containing corpse must be plainly marked with paster, showing name of deceased, place of death, cause of death, the point to which it is to be shipped, number of transit permit issued in connection, and name of person in charge of the remains. There must also be blank spaces at bottom of paster for Station Agent at initial point to fill in the form and number of passage ticket, where from, where to, and route to destination of such ticket.

RULE 8. It is intended that no dead body shall be moved which may be the means of spreading disease, therefore, all disinterred bodies, dead from any disease or cause, will be treated as infectious and dangerous to public health, and will not be accepted for transportation unless said removal has been approved by the State Board of Health, and the consent of the health authority of the locality to which the corpse is consigned, has first been obtained, and the disinterred remains enclosed in a hermetically sealed (soldered) zinc, tin or copper-lined coffin or box, or a box encased in hermetically sealed (soldered) zinc, tin or copper cases.

It is a fact that infectious or communicable diseases follow more quickly the lines of communication, being spread by the movements of the people; and, as the railroads are the principal mediums of communication among the people, the trunk lines spanning the continent, bringing to our doors inhabitants from all parts of the country, it is patent to all that local rules, be they ever so rigid, can afford but partial protection, and, as the bodies of the dead are transported in the same cars and among the baggage containing the wearing apparel of the passengers, the necessity for some effective rules, which will be applicable in all parts of the country, is most apparent. We hope these rules will, to a great extent, accomplish this object, and thereby reduce the danger of communicating disease, by the shipment of dead bodies, to the minimum.

STATE LIVE STOCK SANITARY COMMISSION.

The last General Assembly passed an act establishing "The State Live Stock Sanitary Commission," providing for three commissioners who are practical agriculturists, and engaged in and identified with the live stock interests of the State. These Commissioners, according to the provisions of the act, have selected a State Veterinarian, and together they are to protect the health of the domestic animals of the State from all contagious or infectious diseases of a malignant character. Prior to the passage of this act this Board took cognizance of matters connected with cattle diseases, and recommended the appointment of a State Veterinarian to be under its control. We are still of the opinion that if this recommendation had been acted upon, the work would have been as effective, and would have cost the State much less in its administration.

SCHOOL HOUSES.

The Board, desiring to have placed the school houses of the State in the best possible sanitary condition, sent instructions to the different township trustees.

1. To place the buildings in good repair.
2. Provide a proper supply of pure water.
3. Desks and seats of different heights should be furnished, to suit the ages of pupils.
4. To see that the grounds are properly drained, and to prepare gravel or board walks.
5. Proper ventilation without causing draughts of cold air to come in contact with the pupils.
6. The light should, if possible, be admitted from the left and rear of the pupils, NEVER from the front.
7. The rooms should be so warmed that all may be kept comfortable; stoves and furnaces in good order.
8. Blackboards should not be placed between the windows, and the surfaces of the boards should be DEAD BLACK, not GLOSSY.
9. Suitable water-closets for each of the sexes should be provided. They should be situated far enough away from the house to secure privacy, and not to be a nuisance. They should be kept in good repair, cleaned and disinfected at least twice a month, and be as far from the well as the size of the grounds will permit.

These, by the aid of the County Superintendents, were placed in the proper hands, and we have abundant evidence that much good has been accomplished through their instrumentality. Being convinced, however, that the sanitary condition can still be further improved, we have caused to be made, by the teachers of the State, a survey of every school-house. In these surveys questions are propounded in regard to the size of the room, location of windows, the condition of the ground, ventilation, heating, location of blackboards, source of water supply, location and condition of privies, vaccination of pupils, form and size of desks, and average daily attendance. A tabulated statement of the results obtained will be found in another part of this report.

SANITARY DISTRICTS.

In order to distribute the work of the Board between its members, the State has been divided into five sanitary districts, viz.: Northeast, southeast, southwest, and central, in each of which one of the members resides, and exercises a personal supervision over matters pertaining to the public health.

Every year since its organization the work of the Board has been augmented by the passage of laws for the preservation of the public health, and calls for the enforcement of those in force before it was created. Among the laws may be mentioned the act relating to nuisances; obstructing streams of running water; putting the carcasses of dead animals into any river, pond, canal, lake, public ground, market place, common field, meadow, lot, road, street or alley; the sale of any kind of diseased or corrupted or unwholesome provisions, whether for meat or drink; the sale of meat of sick or diseased animals; selling or offering to sell diluted milk; suffering animals affected with glanders to run at large; burying hogs which have died of cholera; prohibiting the sale of dangerous toys; to prevent the adulteration of vinegar; to regulate the practice of medicine, surgery and obstetrics, etc., etc.

While in many of these no special provision is made for their enforcement other than by the usual processes, yet inasmuch as they affect the "health and life of the citizens of the State" the public naturally looks to Boards of Health for the protection which they seek to afford.

Since the act to prevent the adulteration of vinegar went into effect, this Board has made tests of more than seven hundred samples, procured from wholesale and retail dealers in different parts of the State. Many County Boards of Health have also procured instruments and are making tests in their respective localities. The effect of this work has been to place upon the market a grade of vinegar to meet the requirements of our law, and many inferior and deleterious articles have been banished from the State.

An act approved March 2, 1889, for the protection of the public health by promoting the growth and sale of healthy cattle and sheep, making it a misdemeanor to sell the same without inspection before slaughtering within this State, and authorizing cities to appoint inspectors, in view of some decisions recently given by the Supreme Court will probably be held to be unconstitutional. Because of this uncertainty very little has been done in the way of enforcing this law. Without such provision the city of Indianapolis has its meat inspector, and he has done much to drive from the market, meat from sick or diseased animals. Several prosecutions have resulted from killing cancer jawed cattle by the meat inspector, but he has in each case been upheld by the courts. We suggest, as in a former report, that public abattoirs should be provided by cities and towns, where all cattle whose meat is to be consumed in the municipality should be required to be slaughtered and inspected by a competent person both before and after killing. With proper location and supervision, these abattoirs can be kept in such condition as to prevent them from becoming a nuisance or offensive to the inhabitants.

Notwithstanding this increase of labor added to the Board as before mentioned, the appropriation for the necessary expense has remained the same, as was provided in the beginning, or when it was first organized. With this limited amount of money, much work that ought to be done, must be left undone. The amount now provided by law ($5,000) should be doubled. No State as populous as ours, that has a Board of Health, has an appropriation so small.

The number of annual reports provided for by law is wholly inadequate to supply the increasing demand. Only 3,000 copies are printed annually and this number is not sufficient to furnish one to each physician, much less to other persons, State Boards of Health and public libraries throughout the country.

It is generally known by physicians and others who have given the matter any thought that much sickness is caused by defective and unskillful plumbing and house drainage.

In the last General Assembly a bill was introduced "to secure registration of plumbers, and the supervision of plumbing and drainage in all cities of twenty thousand or more inhabitants, and for the appointment therein of an inspector of plumbing." This passed the Senate, but was defeated in the House. We are not prepared to say whether the bill was perfect in all respects, but some similar measure is required to protect the people from this source of disease.

What has been known as "Fish Lake Creek" or "Prison Sewer Nuisance" at the Northern Prison, located at Michigan City, has long since been a nuisance and doubtless caused a number of deaths in that city. The Board in its its last annual report said, "The Legislature should either appropriate money to complete the sewer, or in some way compel Michigan City to carry out its part of the contract. As long as the sewer from the prison is discharged into the open creek as it is now, the nuisance will continue." Acting upon this suggestion, the Legislature at its last session appropriated a sum of money sufficient to abate the nuisance, and the sewer is now in process of construction and will soon be completed.

Neither from present indications nor past experience have we reason to anticipate any unusual sickness or fatal epidemic, yet it is the part of wisdom in "time of peace prepare for war." Therefore we recommend that there be provided by the Legislature an epidemic fund and placed at the disposal of the Governor, to provide for any emergency that may arise.

FINANCIAL EXHIBIT.

The following is a statement of the receipts and expenditures for the fiscal year commencing November 1, 1888, and ending October 31, 1889. All accounts have been submitted to the Board, for its consideration at its regular meetings, and when allowed have been certified to by the President and Secretary, and audited by the Auditor of State, before warrants were drawn for the same.

Out of the annual appropriation of five thousand dollars, to carry on the work of this department, the members have been paid all actual expenses incurred by attending regular and special meetings of the Board, as well as expenses caused in making sanitary inspections of various sections and the different public institutions under the control of the State government. (Reports of inspections made by the members of the Board will be found in another part of this report.) From our fund we pay the current expenses of the office, the secretary's and clerk's salaries, printing bills, including all publications of the Board, except the annual report.

The Board supplies all of the town, city and county health boards with physicians' blanks for the return of births, deaths, contagious and infectious diseases, county clerks for the return of marriages; and furnishes county boards of health with blanks to make regular quarterly reports, as well as blanks for special reports of contagious and infectious diseases, blank transit permits for the transportation of dead bodies, and blank certificates for undertakers, preventable disease circulars for general distribution among the people, the rules and regulations of the Board for the government of physicians and health officers, programs, and all necessary printing for sanitary conventions held in the State; also printed postal cards on which health officers and physicians in the different parts of the State make weekly reports to this Board of the prevalence of all preventable diseases, and blanks for the sanitary inspection of school houses. We have a balance of fifty-one cents after meeting the obligations for the year ending October 31, 1889.

FINANCIAL EXHIBIT.

By appropriation	$5,000 00

DISBURSEMENTS.

Expenses of Members.

John N. Taylor	224 55
S. S. Boots	122 00
W. A. Fritsch	108 00
S. R. Seawright	32 00

Salaries.

C. N. Metcalf	1,200 00
D. N. Berg	1,000 00
F. M. Stewart	620 00
P. J. Gorman	375 00

Miscellaneous.

C. N. Metcalf, office and traveling expenses	342 09
Wm. B. Burford, printing and stationery	634 81
Lee Holtzman, livery	32 50

A. Jones, postage	$30 00
Wm. Wallace, postage	85 00
S. W. Burns, janitor	96 00
D. N. Berg, traveling expenses	32 50
J. A. J. Cutting, Sentinel	6 70
N. J. Owings, ice	8 89
A. N. Bell, Sanitarian	4 00
G. P. Brown, Sanitary News	7 50
E. Berghausen, Twitchell test	12 00
J. N. Hurty, analysis	25 00
Total	$4,999 49
Balance	51

LIBRARY.

The Library embraces a collection of works by recognized authorities on diseases of domestic animals, bacteria, cholera, drainage, ventilation, heating, food, hygiene, preventive medicine, sanitary science, sewers and sewage, small-pox, suicide, typhoid fever, water, zymotic diseases and miscellaneous works.

Health officers, physicians or other responsible parties desiring to pursue the study of sanitary subjects and matters relating to public health; or wish to investigate subjects of interest to this department, or to use them in discussions before societies or conventions interested in the advancement of sanitary science, can obtain the loan of any of these works by complying with the following terms:

1. Application must be made in writing. Said application must be endorsed by the health officer nearest the party making the application.

2. No more than one book shall be loaned to the same person at the same time.

3. The term for which a book may be loaned shall not exceed three weeks, but at the end of that time a renewal for two weeks more may be granted upon application.

4. When a book is loaned, the Secretary shall enter upon record the name of the borrower, the title of the book, date of loan, etc.

The following is a complete catalogue of books belonging to the Library:

American Health Primers, Titled as Follows.

Brain Work and Overwork	Wood.
Eyesight and How to Care for it	Harlan.
Hearing and How to Keep it	Keen.
Long Life and How to Reach it	Richardson.
Our Homes	Hartshorn.
Sea Air and Sea Bathing	Packard.
School and Industrial Hygiene.	Lincoln.
Summer and its Diseases	Wilson.
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American Public Health Association: Dr. Irving A. Watson, Secretary, Concord, New Hampshire.

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National Conference of State Boards of Health: Dr. C. A. Lindsley, Secretary, New Haven, Connecticut.

State.

Alabama	Jerome Cochrane	Montgomery.
California	G. G. Tyrell	Sacramento.
Connecticut	C. A. Lindsley	New Haven.
Delaware	E. B. Frazer	Wilmington.
Florida	Joseph Y. Porter	Jacksonville.
Illinois	John H. Rauch	Springfield.
Indiana	Charles N. Metcalf	Indianapolis.
Iowa	J. K. Kenneday	Des Moines.
Kansas	J. W. Redden	Topeka.
Kentucky	J. N. McCormack	Bowling Green.
Louisiana	L. F. Saloman	New Orleans.
Maine	A. G. Young	Augusta.
Maryland	C. W. Chancellor	Baltimore.
Massachusetts	S. W. Abbot	Boston.
Michigan	Henry B. Baker	Lansing.
Minnesota	C. N. Hewitt	Red Wing.
Mississippi	Wirt Johnson	Jackson.
Missouri	George Homan	St. Louis.
New Hampshire	Irving A. Watson	Concord.
New Jersey	Ezra M. Hunt	Trenton.

New York	Louis Balch	Albany.
North Carolina	Thos F. Wood	Wilmington.
Ohio	C. O. Probst	Columbus.
Pennsylvania	Benjamin Lee	Philadelphia.
Rhode Island	Charles H. Fisher	Providence.
South Carolina	Henry D. Frazer	Charleston.
Tennessee	J. Berrien Lindsley	Nashville.
Texas	R. Rutherford	Houston.
Vermont	C. I. Allen	Rutland.
West Virginia	Thomas A. Harris	Parkersburg.
Wisconsin	J. T. Reeve	Appleton.

Within the year the State of Florida has created and established a State Board of Health and placed it in good working shape, upon a substantial basis. This makes thirty-one States which now have regular organized boards. Our national representatives in Congress committed a great error when they failed to make the appropriation necessary to maintain the existence of the National Board. We hope Congress will re-establish it on a sound and substantial basis, give it a liberal appropriation and provide for its management by competent and educated sanitarians. We believe every Senator and Congressman from interior States, or States that are not directly benefited by the Marine Hospital Service, will fail to perform his duty towards his constituents (and should be held accountable by them), unless he works and votes to place the National Board of Health in active working order, under the control and management of educated, scientific men. The administration of inter-state sanitation and the permanent establishing of a system of co-operation between States and local governments could be accomplished by a national organization, and prevention of the spread of epidemic diseases from State to State, and from one locality to another, would then be an easy matter as now it is difficult.

There is plenty of work, and necessity for the existence of the National Board of Health, as well as the United States Marine Hospital Service.

The great necessity for a National Board has been thoroughly demonstrated within the past few years, owing to the presence of certain epidemics, especially in Florida.

The quarantines of the entry ports of our country should also be made the subject of much careful consideration by the general as well as the several State governments.

In our judgment quarantine should be made a part of those matters over which the Navy Department of the nation has supervision.

So important has the germ origin of disease become in the consideration of public sanitation that laboratories for the cultivation and identification of germs should be established by the State. Such a department might be maintained at one of the institutions under control of the State.

VINEGAR.

AN ACT to prevent the adulteration of vinegar.

[Approved March 5, 1889.]

Section 1. *Be it enacted by the General Assembly of the State of Indiana,* That every person who manufactures for sale or offers or exposes for sale as cider vinegar any vinegar not the legitimate product of pure apple juice, known as apple cider or vinegar, not made exclusively of said apple cider or vinegar, into which any foreign substances, ingredients, drugs or acids have been introduced, shall be guilty of a misdemeanor, and for each such offense shall be punished by a fine of not less than twenty-five nor more than one hundred dollars.

Sec. 2. Every person who manufactures for sale, sells, or offers or exposes for sale, any vinegar found to contain any preparation of lead, copper, sulphuric acid, or other ingredient injurious to health, shall be guilty of a misdemeanor, and for each such offense shall be punished by a fine of not less than ten dollars nor more than one hundred dollars.

Sec. 3. No person shall, by himself, his servant or agent, or as the servant or agent of any other person, sell, exchange, deliver or have in his custody or possession, with intent to sell or exchange, or expose or offer for sale or exchange, any adulterated vinegar, or label, brand or sell as cider vinegar any vinegar not the legitimate product of pure apple juice, or not made exclusively from apple cider, and such acts are declared to be a misdemeanor, and the person so offending shall, for each such offense, be punished by a fine of not less than ten nor more than one hundred dollars.

Sec. 4. All vinegars shall be without artificial coloring matters, and shall have an acidity equivalent to the presence of not less than four per cent. by weight of absolute ascetic acid, and in the case of cider vinegar shall contain in addition not less than two per cent. by weight of cider vinegar solids upon full evaporation over boiling water; and if any vinegar contains any artificial coloring matter or less than the above amount of acidity, or, in the case of cider vinegar, if it contains less than the above amount of acidity or of cider vinegar solids, it shall be deemed to be adulterated, within the meaning of this act. All vinegars not cider or fruit vinegars shall be without artificial coloring, nor shall they be mixed with cider or fruit vinegars, or in any manner changed to imitate a cider or fruit vinegar.

Sec. 5. Every person making or manufacturing cider vinegar who is not a domestic manufacturer of cider vinegar shall brand on each head of the cask, barrel or keg containing such vinegar the name and residence of the manufacturer, the date when same was manufactured, and the words "cider vinegar." And no vinegar shall be branded "fruit vinegar" unless the same be made wholly from apples, grapes or other fruit. Whoever violates any of the provisions of this section shall be fined for each offense not less than ten dollars.

As might have been expected, considerable opposition to the enforcement of this law has developed. In justice to all, it is proper to say however, that this opposition comes chiefly from manufactures who have been in the habit of putting upon the market cheap, adulterated and inferior vinegars, and not from those who desire to do a legitimate business. In the administration of the law, care has been taken not to injure any who have shown a disposition to comply with its provisions. Illustrative of the different views entertained by different individuals, some communications upon the subject are herewith published. The opinion of the Attorney-General with reference to mixing vinegars, is herewith published, and is in harmony with the act on that subject:

OFFICE OF THE ATTORNEY-GENERAL OF INDIANA,
INDIANAPOLIS, Aug. 12, 1889.

DR. C. N. METCALF,
Secretary State Board of Health:

SIR:—You submit for my consideration the questions set forth below:

1. Under the act of the last General Assembly entitled "An act to prevent the adulteration of vinegar, etc.," approved March 5, 1889, page 123, "may cider vinegar be artifically colored?"

2. Is the mixing of different vinegars permissible?

1. Section 4 of the act you refer to is as follows: "All vinegars hall be without artificial coloring matter, and shall have an acidity equivalent to the presence of not less than four per cent. by weight of absolute ascetic acid, and in the case of cider vinegar, shall contain in addition not less than two per cent. by weight of cider vinegar solids upon full evaporation over boiling water, and if any vinegar contains any artificial coloring matter, or less than the above amount of acidity, or, in the case of cider vinegar, if it contains less than the above amount of acidity, or of cider vinegar solids, it shall be deemed to be adulterated within the meaning of this act. All vinegar, not fruit or cider vinegars, shall be without artificial coloring, nor shall they be mixed with cider or fruit vinegars, or in any manner changed to imitate a cider or fruit vinegar."

It will be noticed that the first provision is absolute that "*all* vinegars shall be without artificial coloring matter."

In the next clause is the provision that "if *any* vinegar contains any artificial coloring matter, it shall be deemed adulterated."

In view of these unqualified provisions, there can be no doubt that it was the legislative purpose to prohibit the artificial coloring of all vinegars. The last sentence of the section contains no implied permission to artificially color cider or fruit vinegars, for that part of the section has no reference to the materials mentioned, but the prohibition is directed to other vinegars, changed by coloring or otherwise to imitate cider or fruit vinegars.

2. The last sentence of the section before quoted contains the only provision in the act relating to the mixing of vinegars. It relates to the mixing of other substances with fruit or cider vinegars.

Such an act is prohibited absolutely because of the danger, whatever was the purpose in doing it, that the product may be imposed upon the public as fruit or cider vinegar. Cider or fruit vinegars may be mixed with each other; malt and other vinegars made from harmless substances, not fruit or cider, may be mixed together.

It is the mixing of fruit or cider vinegars with other substances which is prohibited, for the product would be an adulterated fruit or cider vinegar.

Respectfully submitted,
L. T. MICHENER,
Attorney-General.

INDIANAPOLIS, Ind., Aug. 20, 1889.

To the Honorable State Board of Health:

GENTLEMEN—The late General Assembly of the State of Indiana passed an act, presumedly in the interest of the public health, entitled, "An Act to Prevent the Adulteration of Vinegar." As certain provisions of this act are apparently hostile to long established business interests, and in nowise protects or promotes the public health, and, moreover, if carried out in a spirit of "blind zeal," will disrupt or at least greatly retard the legitimate vinegar business, with a strong tendency to cause a wholly unnecessary advance of prices upon this commodity, and at the same time outlaw the purest and most wholesome vinegar products. I refer to the supposed prohibition placed upon the mixing of chemically pure malt or spirit vinegars with the product of the orchard. As my personal interest lies almost entirely in this direction, I will confine myself to a cursory discussion of it.

Prop. 1. That an absolutely pure vinegar is diluted acetic acid, all authority will concede.

Prop. 2. An absolutely pure acetic acid is substantially and chemically without solid matter.

Prop. 3. The active agent or valuable property of vinegar, either as a condiment or a preservative, is acetic acid, the flavor of vinegar being only incidental. Now, I have no hesitancy in saying that, as men of science, you must concede the above proposition to be correct. Now, let us inquire into the relative merits of the vinegars made by different processes. Now, spirit vinegars, *i. e.*, vinegars made from spirit distilled from grain, "usually from a combination of malt, rye and corn," are conceded by all who have had practical experience in preserving fruits and vegetables, to be vastly superior to any and all other vinegars for such purposes. The reason that spirit or malt vinegar, "as it is usually termed," is so much superior to fruit or cider vinegar as a preservative is on account of its great freedom from "solids" and other impurities, and because its character as a vinegar is fixed, and there are no disturbing elements to cause a second fermentation. Now, that any vinegar which is the pure and unsophisticated product of either grains, vegetables or fruits, is pure and wholesome as a condiment, you will not dispute; but I challenge any one to dispute the fact that any vinegar, whatever be its origin, which does not thoroughly and perfectly preserve the fruits or vegetables which are put up in it is not only unwholesome and unfit for such use, but is also a menace to the public health. Now, if the above statements are in accordance with the facts, it certainly proves that spirit vinegar is of greatly superior wholesomeness for general purposes, and that the reason of this superiority is on account of its being substantially pure acetic acid.

Now of cidar vinegar, I would say that its chief merit, "when made from good, sound and clean fruits," lies in its flavor. Now this is the great and only claim that can be fairly set forth for the product known as cider or fruit vinegar. Now let us glance at its faults. In the first place, its lack of uniformity of color, flavor and strength. Secondly, it is oftener made from decomposed or partially decomposed fruit than from sound fruit, and is usually made with such slight pretense to cleanliness as renders it odious to a thinking person. Thirdly, it is not a safe agent to use as a preservative, because, on account of its "mixed" origin, it is so heavily charged with impure solids, which decompose fruits and vegetables when put into it. Now it is utterly impossible to thoroughly preserve anything in cider vinegar which conforms to the law on this subject, without first boiling, skimming and straining such fruit vinegar to rid it of the "not less than two per cent. of solids," which it must contain under said law. Again, an absolutely pure vinegar, made by distilling pure fruit juices and made in a thoroughly scientific manner, would not pass, under the law, because it would not contain "not less than two per cent. of solids." Now it is clearly shown that cider vinegar has one particular virtue; that of flavor. To offset the many valuable qualities of spirit vinegar, who among you, although the flavor of citric acid might please taste more, would use it instead of salycilic acid for the preservation of some valuable remedial agent? The writer of this has been engaged in the manufacture and sale of vinegars in this city and State for a period of eight years, and has on no occasion or at any time put out any vinegar adulterated with acids or other substances, but on the contrary has conducted his business in a legitimate and straight forward manner, and has used only the pure vinegars made from grain and pure fruit juices, and by a judicious combination of same, by which the well known preserving qualities of the spirit vinegars are retained and at the same time a fine fruit flavor acquired by using a certain proportion of cider vinegar made from sound fruit, which, on account of its great purity and the quantity used, in no way impairs the preserving properties of the compound. This vinegar, sold for what it is, has won for itself universal favor and secured for it a larger sale than any brand of vinegar has ever had in this State, and it is sought after by legitimate trade wherever known.

Now this vinegar is sold under a brand which clearly sets forth what it is made from, with a further statement branded plainly upon the barrel, setting forth its superior merits and with no attempt to disguise it as the product of cider or fruit only. Now upon the broad proposition that the mixing of two pure grades of vinegar must produce a pure product, and on account of the matter herein set forth at length, the undersigned petitions the State Board of Health to make such ruling and take such action in this matter as will place such combined vinegar products herein described upon the high plane which they deserve—such conclusions being entirely in accord with the public welfare and health.

Very respectfully,

H. F. Solliday.

CHICAGO, Ill., Aug. 19, 1889.

H. F. Solliday, Esq., Indianapolis, Ind.:

DEAR SIR:—Your favor of the 16th is at hand. It is certain that if the Attorney-General had given as much attention to the investigation into the quality of the various articles of vinegar as has been given by Dr. Metcalf, he would never have made the ruling you describe. The whole agitation springs from absolute lack of acquaintance with the subject. If the Legislatures of the few States, which have passed similar laws, had instituted an inquiry and permitted a few discussions before acting they would never have passed the laws. A stupid and senseless cry of "adulteration" was raised when there was no adulteration. The vinegar manufacturers are themselves largely responsible for this, in employing unprincipled or ignorant salesmen, who know no better way to sell their goods than by decrying those of rival houses, the fact being there is no adulteration of vinegar within the limits of the United States. Vinegar is made from alcohol, and from alcohol only. Sometimes it is made from alcohol obtained by fermentation only, as in the case of cider vinegar, "made from, hard cider;" English malt vinegar, "made from ale or beer;" French wine vinegar, "made from spoiled wine usually," and the glucose vinegar, made along the Mississippi River and sold as white wine vinegar. Generally, however, it is made from distilled spirits made from grain, as that is the purest form in which alcohol can be found. Alcohol in its fermented form, as in ale, beer, cider, etc., carries a large proportion of the solid matter of the substance from which it is made. These are, of course, impurities, but they help to give the flavor to the vinegar when converted. When alcohol is distilled these impurities are eliminated, but so also is a portion of the flavor. If hard cider were converted directly into vinegar it would be a comparatively impure, but pleasant flavored, article. If this same hard cider were first distilled into apple brandy and that converted into vinegar, the latter would be much purer than the other, but would be inferior in flavor. Any vinegar made from distilled alcohol is necessarily purer than any made from alcohol not distilled. It is, however, inferior to it in flavor. Now the absurd charge is made that the comparatively impure article of cider vinegar, made from undistilled alcohol, is adulterated by being mixed with white wine or malt vinegar made from distilled alcohol. The pure article adulterates the impure. Is it not ludicrous, if it were not shameful, to find in the statutes of Massachusetts, New York, Ohio and Minnesota a requirement that the proof of the purity of cider vinegar shall be its impurity—its possession of a certain percentage of "solids?" We suppose these laws got enacted through the scheming energy of one or two interested parties and the ignorance and indifference of all the rest. It is proper, of course, that vinegar should be truthfully branded; that malt vinegar should not be sold for cider vinegar or *vice versa*, or that a mixture of both should not be sold for either, but this is in the interest only of the general morals of the trading community, and can not touch upon the public health. If a rival merchant mixed malt vinegar with cider vinegar and misled his customers into believing it was either exclusively, the man might be guilty of trickery, but could not be convicted of selling an article injurious to the public health. The mixture might be thought superior to either constituent, and if the customer is informed by the brand of the mixture, it would be a singularly arbitrary law which would prevent him from buying it. It would also be inoperative, for he could buy the ingredients separately and mix himself, if he chose. There can not be a purer article of vinegar made than the white wine and malt vinegar made from grain which has gone through the process of distillation. It forms the bulk of the vinegar made, not only in this country, where apples are cheap, but in France and Germany, where grapes are cheap, a few of the people will prefer cider or wine vinegar, but the mass will prefer the other because of its purity and cheapness. Adulteration is the mixing of an inferior article with a superior one and passing it off as the superior. That is not done by vinegar manufacturers. Would a mixture of rye whiskey and Bourbon whiskey be an adulteration? If so, which of them would be adulterated? We feel confident that the very thorough examination given to the subject by Dr. Metcalf and the Board will bring about the most satisfactory results to the public and to the vinegar interests. Too little is known about it, and the more searching the inquiry the less need in future of legislation which is needless and annoying. If a general law were passed, calling for the correct branding of all food articles and giving the Board of Health power to condemn all improperly branded, it would be worth forty laws such as the one in question, but it would not affect the vinegar interests, and we would gladly support it.

Very truly yours,
PRUSING VINEGAR CO.

A. P. Callahan, Mgr.

The following was received from Mr. Schuyler, a member of the firm of Schuyler & Cook, of Chicago, who are engaged in the manufacture of cider vinegar on a large scale:

To the Hon. State Board of Health of Indiana:

GENTLEMEN—The law in relation to vinegar passed by your last Legislature has received and is receiving considerable hostile criticism, from a class of vinegar manufacturers and dealers, which seems to us, both irrelevant and unjust.

The law is very simple and its object seems to be to put the vinegar business on a legitimate, honest and desirable basis to all concerned-consumers, dealers and manufacturers.

It declares that vinegar shall contain no poisonous or injurious acid substances, (like sulphuric acid, etc.)

It declares that vinegar shall have an acidity of not less than four per cent. acetic acid (40 gr.)

It declares that all vinegars shall be branded and sold for just what they are, and shall have no artificial coloring matter nor be mixed to deceive the public. The law does not attempt to decide what kinds of vinegars are the purest, more valuable or desirable.

It properly leaves such matters to the public and the enterprise of the manufacturers. It neither taxes nor prevents the manufacture of any and every kind of pure vinegar.

It does nót attempt to fix prices. It merely says when the consumer calls for any vinegar (an article, the quality of which is not readily discernible), he shall receive vinegar free from poisonous acids and of a strength sufficient for all family purposes, and the kind he desires; in short, shall not be imposed upon.

The law prohibits the branding and sale as cider or apple vinegar, any vinegar not the product of pure apple juice, and compels all manufacturers and dealers to brand and sell their vinegars for just what they are, thus protecting the consumers in the quality and kind of vinegars they may desire. There are practically only two kinds of vinegars manufactured in this country for the general trade, however many names vinegars may be sold under. One is real cider or apple vinegar made from the actual juice of the apple; the other is corn vinegar made from a low distillation (without a worm) of corn, usually called low wine or white wine vinegar.

Both of these vinegars are pure and wholesome when properly made, and both may be poor and undesirable if not intelligently and carefully manufactured and handled. The natural color of cider vinegar, as all know, is red or brown, that of corn or low wine is white. Vinegars partake of the flavor of the body of the materials from which they are made; cider or apple vinegar has the apple or cider taste, corn vinegar the distilled low wine or whiskey taste, and consumers, for family use, prefer largely the apple flavor to the whiskey flavor.

It costs twice as much to make pure cider vinegar as corn vinegar, hence the injustice to both consumer and manufacturer of real cider is apparent, when corn vinegar manufacturers color their white vinegar with burnt sugar, and dealers palm it off on consumers for genuine cider at the price of real cider vinegar. The only object in coloring corn vinegar is to make it look like cider, so as to be able to sell it as actual cider.

We have noted with considerable interest that corn vinegar manufacturers are not pleased with that special clause of your law prohibiting coloring white vinegar, and mixing (though the amount of cider ever mixed with white is infinitesimal, as it is cheaper to color and add a little apple essence), as white vinegar can not be sold to the most unsophisticated as cider.

We note also that there is an astonishing amount of malt vinegar, so called, on your market this fall (branded and sold as malt), which we have found upon examination, so far as we have taken samples of it, to be merely corn vinegar with a little malt extract or essence in it in some cases, and in others nothing in it save malt color. To any one knowing the actual cost and difficulty of making genuine malt vinegar, and the time required to age it up to be in good condition for use, the price at which this so called malt vinegar is sold gives it away without even an examination. The most absurd claim, however, that we have met is that corn vinegar is a purer and better vinegar than cider, and that the people are prevented from using this purer vinegar by your law.

The solicitude of such corn vinegar manufacturers for the people's welfare *now* is really touching. On the contrary, now, when your law is fairly enforced, consumers get a much better vinegar generally than ever before; they get genuine cider vinegar 40 grain strength when they call for cider, instead of 25 to 30-grain colored low wine, and at the same retail price, I understand, and also get all the pure corn or white wine vinegar they want not less than 40 grain, instead of 25 to 30 strength.

The law discriminates against no kind of vinegar. If corn is purer and better, its manufacturers have the privilege of setting forth its superior qualities, and developing its sale to its fullest extent, and rather rejoice that the law requires it to be sold for white, its natural color, and on its merits, and not allow it to be masquerading under the guise of the inferior cider vinegar. But does any one suppose that, if it costs twice as much to make corn as cider, corn vinegar would be colored to imitate cider or such a privilege be demanded by its manufacturers and dealers?

Your law, although only enforced yet to a very limited extent, has effected, we find, such changes that hundreds of barrels of genuine cider vinegar have been sold the last fall at living prices, in places where, practically, none could be sold before, though every dealer nearly was offering what was called pure cider vinegar to his customers.

Your State, before your vinegar law was enacted, was notorious for being the dumping ground of much of the lowest and poorest grades of vinegar from various surrounding States, although your consumers paid at retail mostly the price of a good vinegar.

The law, as we understand it, is intended neither to give preference to any kind of vinegar nor to educate the people to the use of any particular kind of vinegar, but merely to protect them from imposition and fraud in an important article of food, and it would be well, it seems to us, if your Legislature would, like many other States, establish a regular Dairy and Food Commission and place all important food products under its supervision.

Both cider and corn vinegars have their legitimate demands, uses and prices, and should be required to stand each on their own merits. In packing-house products (pigs' feet, tripe, etc.) and many others, corn vinegar is preferred on account of its white color.

We know whereof we speak, when we say cider vinegar manufacturers could sell annually thousands of barrels of genuine cider vinegar (which can not now be sold) to some of these manufacturers, if its color were only white.

The absurdity of statements we frequently meet, that cider vinegar properly made will not keep pickles, is shown by the fact that the highest priced pickles kept by fancy grocers, so far as we know, on our markets, are a certain brand of genuine cider vinegar pickles I could name.

Massachusetts, New York, Connecticut, New Jersey, Pennsylvania, Ohio, Michigan, Minnesota, Kansas, in addition to your State, have passed, since 1884, laws similar to yours in regard to vinegar and many other food products, and they are found to be beneficial to the extent they are enforced, (they are being amended and executed more vigorously from year to year), and are recognized as necessary and just to the manufacturers, dealers and the consuming public.

Your Board, in whose charge your vinegar law has been placed, in demanding a fair and thorough enforcement of its provisions, is doing a good work, beneficial to the consuming public and to all legitimate and honest manufacturers and trade.

W. H. SCHUYLER.

While the tests of vinegar being made by the Board were still in progress the *Indianapolis Independent* published the following communication, written by W. B. Clarke, M. D., of Indianapolis (Secretary of the State Homeopathic Medical Society), under the head of "Vinegar; how and why its free use is very deleterious; beer drinkers should not stick to one brand," which we give in full:

The newspapers have recently published very full accounts of the efforts of the State Board of Health, still in progress, to determine the extent and character of the adulteration or sophistication of the vinegar sold in this State, and some alarming discoveries have been made and given out by Dr.

Metcalf, the able Secretary of the Board, who conducted the experiments, though his official report has not yet been made. These investigations can not fail to be of great benefit to the public, both by putting consumers on their guard and stimulating manufacturers and dealers to provide pure goods.

The law to prevent deception in sales of vinegar enacted last winter by the New York Legislature is very stringent in its provisions. It prohibits the manufacture, sale, or keeping for sale "(1) any vinegar which shall not have an acidity equivalent to the presence of at least four and one-half per centum by weight of absolute acetic acid, or (2) any cider vinegar which shall have less than such amount of acidity, or less than two per centum by weight, of cider vinegar solids upon full evaporation over boiling water." It also forbids the sale of anything not made exclusively of pure apple juice, as cider vinegar; the use of any preparation of lead, copper, sulphuric acid, or other ingredients injurious to health; that every manufacturer and producer shall plainly brand the package containing the vinegar; and makes every violation of the statute a misdemeanor, punishable by fine of $50 to $250. The Dairy Commissioner of the State is charged with the enforcement of the law.

But there is a phase of this vinegar question that should be brought to view, and I hope the Board of Health will mention it, namely, that far too much vinegar is used to be compatible with good health. The general belief is that it is a wholesome and necessary adjunct to our diet, but really it might well be dispensed with almost entirely, except for pickling purposes. If used it should be used very sparingly. A slice of lemon is far preferable as its substitute, and limes may be used if convenient, or let the vinegar cruet be filled with lime juice. If vinegar must be used, that made from wine is better than that made from cider.

The power of vinegar to cause emaciation when taken in small glassfuls daily for a length of time has been taken advantage of by many, usually women, for the purpose of getting rid of an obnoxious embonpoint (a consummation, by the way, harmlessly and nearly as effectively reached by the very free use of cider, even to the extent of producing catharsis), and medical works teem with cases which have resulted from such suicidal practice. Thus used it produces blood changes which may soon become dangerous; if not so, the decline in health is slow but certain, and has often ended in consumption itself. *En passant*, it may be pertinent to remark that to the inordinate use of pickles and vinegar by many young women, still attending school, may often be traced their unhealthy or debilitated condition. One writer says that even "a moderately excessive use of vinegar causes intestinal irregularity, constipation, diarrhea, flatulency, etc., as well as cough, flushing and watery eyes." As a rule, therefore, persons who are having trouble with their digestive organs should use little or no vinegar.

Probably the most popular adulterant of vinegar is sulphuric acid, one of the most corrosive poisons, yet so easily detected that it is a wonder that it is used. Now, commercial sulphuric acid (commonly called oil of vitriol) almost always contains arsenic. So an inveterate vinegar user who happens to use one of those adulterated brands for quite a while might be called an arsenic eater and be affected like one. The same may be said of constant beer drinkers who stick to a brand that has artificial glucose used in its manufacture (as is sometimes done for cheapness), for glucose is made from starch by the use of sulphuric acid, and a rough and cheap glucose for beer-makers may not have all the sulphuric acid and arsenic extracted from it. Chemists have repeatedly proven the presence of arsenic in beer. It gets there accidentally, though, as above described. Picrotoxine, a virulent poison, gets in beer, also, but designedly. It is put there for its bitter taste, being cheaper than hops.

Our word vinegar comes from the French word *vinaigre* (*vin*, wine, and *aigre*, sour), its peculiar acid being called acetic acid. The philosophy of its production is as follows: Cider, wine and alcoholic liquors generally, when freely exposed to the air, turn sour, go through a second fermentation, the alcohol in each changing into acetic acid under the influence of the oxygen in the air. This is vinegar, which has in it from two to six per cent. of acetic acid, its acidity depending on its source, or rather the producing article used. By the destructive distillation of wood much the same acid is produced—pyroligneous acid—but it is eight times as strong as ordinary vinegar, and, diluted with water, makes a good vinegar.

Vinegar may be produced, as I have said, by allowing any alcoholic liquid to become sour gradually by exposure to the air in imperfectly closed vessels, and taking advantage of this fact, it is often made quickly on a large scale by simply dripping cider, wine, whisky, or brandy, diluted with water through a large cask filled with wood shavings and provided with holes in the sides for the free entrance of air. It may be necessary to pass the liquid through the shavings several times, but if the cask is properly arranged one percolation is enough.

The great reason why wine vinegar is better to use than cider vinegar is because it has so much less extraneous coloring matter, malic acid, etc. The precipitation of most of these extras may be startlingly shown by the acetate of lead test, particularly if the vinegar is made from cider of the first pressing, not from the after pomace. Indeed, cider made from the after pomaces has occasionally had its vinegar denied to be cider vinegar on account of its low color.

VINEGAR.

BY C. N. METCALF, M. D.

Vinegar is a vegetable acid liquor, with an agreeable, penetrating odor and a pleasant taste. It can be made from wine, cider, beer and other liquors which contain alcohol. All vinous liquors continually tend to become vinegar, and sooner or later are actually changed into it, unless this metamorphosis is prevented by the use of some obstacle to fermentation. Vinegar is produced by a second degree of fermentation, or that which succeeds the spirituous. Any liquid which has undergone the vinous fermentation, if exposed to the air a sufficient length of time, is capable of another change, the alcohol absorbs oxygen from the atmosphere and is converted into acetic acid and water, which are the essential ingredients of vinegar; besides these, however, it may contain various other substances, such as extractive and coloring matter, which may be derived from the particular spirituous liquor from which it may have been manufactured. Vinegar, like most vegetable products, if it be long kept and be subjected to the influence of air moisture and a moderate temperature, will become muddy, ropy, acquire an unpleasant smell, lose its acidity and putrefies. When vinegar has run a little beyond the acctous fermentation and begun to enter the putrefactive, the putrefaction may be arrested by boiling it sufficiently to coagulate the gluten, on the presence of which the putrefactive change depends. Putrefaction may also be arrested by quenching a red-hot iron in it; by this process some of its acidity will be lost, which can be restored by the addition of a little spirits of wine. Racking it off from its dregs and afterwards keeping it in well-stopped vessels in a cool place will also prevent the putrefaction of vinegar. Vinegar dissolves among metallic bodies, zinc and iron.

"United with copper it forms a virdigris." "With lead it forms sugar of lead." "Boiled in the common glazed earthen vessels, in the glazing of which this metal is the principle ingredient, it extracts so much as to become strongly tainted with the pernicious qualities of the lead. Gold, platina, silver and quicksilver are not affected by vinegar in their metallic state; the two first have not been observed in any state to be affected by it."

"All pure vinegars, chemically, are merely acetic acids of greater or less strength, and nothing else; and it is still an unsolved problem with chemists to actually determine, from a chemical test, from just what every vinegar is made," as vinegar can be manufactured from any liquid containing alcohol. Our law requiring four per cent. of acidity can therefore only be made from liquor containing four per cent of alcohol.

To a great extent vinegar derives its flavor from the body of the material from which it is manufactured, although it frequently requires an expert to tell what kind of vinegar it is.

Vinegar varies in color from white to dark brown, which is also derived from the material from which it is made, although it may be artificially colored any hue.

According to the U. S. Pharmacopœia: "Vinegar should be devoid of lead and copper and of free sulphuric acid, as shown by its not being discolored by sulphuretted hydrogen, and yielding no precipitate, when boiled with a solution of chloride of calcium; and of such a strength that a fluid ounce would require for saturation not less than thirty-five grains of bicarbonate of potassium. After saturation it should be free from acrid taste, indicating the absence of acrid substances, the taste of which may have been concealed by that of the acetic acid." Immediately after this vinegar act went into effect, we commenced to examine the vinegars offered for sale in the Indianapolis market; health officers and others in different parts of the State were invited to send us samples for examination. Testing all as to strength, purity, etc., we soon discovered that a vinegar branded "Pure Malt Vinegar," of required strength and free from adulteration, was on the market, selling at a very low figure, from 8 to 9 cents per gallon. Believing that a vinegar made absolutely from pure malt could not be produced for such money, we both interviewed and wrote to manufacturers and experts, asking their opinion on the subject, and the universal answer was that it could not be made for less than from 20 to 25 cents per gallon. The following is quoted from a letter written by the Hon. F. A. Derthick, Dairy and Food Commissioner, of Ohio, dated Aug. 5, 1889:

It is claimed that the vinegar is made like beer, from the mash, without distillation, getting its color from the parched grain. We can not find any solid extract in it, however, and think that just enough malt has been added to give color. Still I visited *——'s works in ——State, and they seemed to be right; but the vinegar on the market does not correspond by analysis with that taken at the works. The former has about 22-100 solid extract, while the latter shows nearly one per cent. After gathering all the information we could in reference to this vinegar, we were not satisfied, and decided to have it analyzed by a competent analytical chemist, removed from local prejudices and influences. We procured some of the vinegar on the open market of Indianapolis and sent it to Dr. Henry Leffman, of Philadelphia, one of the best analytical chemists in this country. After the Doctor had completed his analysis he forwarded us the following statement:

PHILADELPHIA, Aug. 10, 1889.

C. N. Metcalf, M. D:

DEAR SIR—The sample of vinegar sent by you shows the following results:

Acetic acid	5.00 per cent.
Solid extract	4.50 per cent.

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*As the letter was not written for publication, we therefore omit names.

Free mineral acids and lead and copper are absent. From its low specific gravity and proportion of solid extract, I am of the opinion that this is not malt vinegar.

Yours,
HENRY LEFFMAN.

After the receipt of this certificate, we wrote to him, at the request of the manufacturer, asking him, if it was not malt vinegar how he accounted for its strength, purity and the amount of solid extract shown; and if it did not show phosphates, which are always present in malt vinegars. About a week later the following answer was received:

PHILADELPHIA, Aug. 17, 1889.

DEAR SIR:—On reference to my copying book, I note that a typographical error made me give the extract as 4.5 per cent., whereas, it is really 0.45 per cent. The error being due to accidental transposition of the period. The actual figures from my weight book are:

Weight of dish and residue from 10 C, C	43.575
Weight of dish	43.530
Residue	.045

This accounts for the low gravity. In answer, therefore, to the question propounded, I may say that I understand by malt vinegar a substance prepared wholly from malt, and that, according to regular experience, such vinegars always have a gravity over 1.017 and generally over 1.021, and do not yield less than 5 per cent. of extract. That this sample may contain some malt vinegar, I am not prepared to deny, but I do not consider such a mixture correctly described as malt vinegar. It is important to bear in mind that, under any circumstances, it is a good vinegar. There was found a small amount of phosphates, but this would also be explicable upon either the view that some malt vinegar is present, or they might be derived from other sources. Messrs. —— —— & Co., of —— City, have written in regard to the sample.

Yours,
HENRY LEFFMAN.

When we received this we presumed that the fact was settled that this was not a malt vinegar, but such proved not to be the case, for nearly two weeks later we received the following, which are self-explanatory:

PHILADELPHIA, Aug. 28, 1889.

DEAR SIR:—Since sending you the certificate of analysis of vinegar, I have been in correspondence with Messrs. ——— & Co., and it appears from their statements, coupled with certificates of chemists, that they prepare a malt vinegar by a process which produces an article of lower gravity and solid extract than has been obtainable by the older processes on which the standard has been based. In forming my judgment I took the rule laid down by Allen and Blythe, certainly very competent authorities, that malt vinegar never has a lower gravity than 1.017, and contained at least 5 per cent. of extract. I did not see, therefore, how I could consider the sample in question wholly malt vinegar, although I was not prepared to deny that they had used some malt in its manufacture. Under the circumstances, however, I deem it just to ask that my first statement be withdrawn, and the enclosed certificate be substituted. Since the analytical results can have but little significance under the new conditions, I have thought that the simplest method would be to state the conclusions, and to add the reason therefor, namely the information furnished by the manufacturer. The whole difficulty is on the inference from the results and not with the results themselves. Trusting that you accept the new certificate, I am

HENRY LEFFMAN.

The following is the certificate:

PHILADELPHIA, Pa., Aug. 28, 1889.

Dr. C. N. Metcalf, Secretary:

This certifies that I examined samples of vinegar, manufactured by ——— & Co., of ——— City, ——— State, and sent to me by you, and find the same to contain 5 per cent. of acetic acid and to be free from mineral acids and metallic impurities. From information transmitted to me by the manufacturers and attested by chemists, I am of the opinion that this is a malt vinegar, manufactured by a process which produces an article of lower specific gravity and less proportion of solid extract than is the case with malt vinegars made by the older processes, this difference in composition not affecting in any way the wholesomeness of the vinegar.

HENRY LEFFMAN.

Since receiving the above we have sent the Doctor several samples of similar malt vinegar, and for each have received a certificate like the last. When such high authority makes a statement that a particular vinegar is malt we must accept such statement. It may be possible that there has only been enough parched grain used in the mash to give the vinegar a dark color, and if so further examinations will determine. Our object in giving so much space to Dr. Leffman's correspondence and certificates is to show how difficult it is for the very best chemists to always determine just what a vinegar is made from. They can readily tell you the strength of vinegar and whether it is adulterated with mineral acids and metallic substances, and if it is wholesome and fit to use. It can be determined with considerable certainty whether a vinegar is made from cider or not, as "chemists have found that cider in a general way will give a precipitate, and cider vinegar, in a general way, though to a very much less extent, will give a precipitate of what they call malic acid with acetate of lead."

Vinegar which is the product of cider, made from the second pressing of the apple, will show a flocculency or turbidity upon the addition of a solution of sugar of lead or subacetate of lead, but will not give a precipitate.

We are reliably informed that a large portion of genuine cider vinegar, made on generators, from genuine apple cider, fails to give such precipitate even where the cider gives a flocculent precipitate in going on the generators. Since the vinegar law of our State has been in operation we have examined nearly seven hundred samples of vinegar. We endeavored to determine just what kind of vinegar it was; whether cider, wine, grain (spirit) or malt, these being the only varieties of vinegars sold on our market, except one made from glucose, which was occasionally met with. This vinegar is manufactured outside of our State, and west of the Mississippi River, and always showed sulphuric acid. We next tested the vinegar for strength, and then for adulterations. The following is the result of our investigation: Of the whole number examined, 55 per cent. was of required legal strength; 45 per cent. was below the required legal strength; 12 per cent. showed adulteration, principally sulphuric acid; 34 per cent. was spirit or grain vinegar colored, that had been sold for pure cider vinegar. The Board, together with the local health boards, will continue the examination of vinegars offered for sale in the markets of the State until all spurious articles are driven out. Town and city health officers throughout the State are equipping themselves with suitable apparatuses with which they can make a complete analysis of all vinegars offered for sale. In conclusion, we wish to say that we indorse what Dr. Clarke has said in his article in reference to the evil effects upon the human system following the liberal use of vinegar as a food. We know it has frequently been used internally in large quantities to reduce obesity, and also to render a florid complection pale. Any substance that will bring about such decided changes in the human body can result in nothing but injury to it. Vinegar or diluted acetic acid acts upon the blood by destroying its red corpuscles, or that portion of it which gives the human being color and vigor; and the result is the person becomes pale, nervous, anæmic, and suffers loss of health.

ANALYSIS OF VINEGAR BY DR. B. F. DAVENPORT, LATE MILK AND VINEGAR INSPECTOR FOR BOSTON; CHEMIST TO MASS. STATE BOARD OF HEALTH.

The following detailed practical method of determining whether a sample of cider vinegar or apple vinegar conforms to the requirements of the statute relating thereto, which requires that it should be not only the legitimate and exclusive product of pure apple juice or cider, but also that it should not fall below the quality of posessing an acidity equivalent to the presence of not less than 4½ per cent. by weight of absolute, that is monohydrated acetic acid, and should yield, upon full evaporation at the temperature of boiling water not less than two per cent. by weight of cider vinegar solids, may prove of interest to those dealing in the article. As the limits set by the statute are in per cents. by weight, the portion of vinegar taken for the tests should, for perfect accuarcy, be also taken by weight, that is the quantities of 6 and 10 grammes are to be taken for the tests of strength and residue, but as taking it by measure, if of about the ordinary atmospheric temperature ot 60 to 70 degrees F. will make the apparent per centage at most only 1 to 2 per cent. of itself greater than the true, that is will make a true 5 per cent. vinegar appear to be, say from 5.05 to 5.10 per cent. measuring proves in practice to be accurate enough for all common commercial purposes, and therefore the quantities of 6 and of 10 cubic centimeters by measure may be taken in place of as many grammes.

All the measuring apparatus necessary for making the legal tests is one of the measuring tubes, called burettes. It is most convenient to have this of a size to contain 25 to 50 c. c., that is cubic centimeters, and have these divided into tenths. The best form of burette is the Mohr's, which is closed by a glass stop cock. Besides this only a dropping-tube, called a pipette, graduated to deliver 6 and 10 c. c. will be needed. These tubes can be obtained of any philosophical or chemical apparatus dealer, being articles generally kept in stock by them for common use, like yard sticks.

The only two chemicals needed in determining the strength of a vinegar are such as can be obtained of any competent apothecary in any city of the State. They are simply a small vial of a one (1) per cent. solution of Phenol-phthalein in diluted alcohol, and a sufficient quantity of a solution of caustic soda, prepared as directed for "Volumetric Solution of Soda," upon page 399 of the last "U. S. Pharmacopœia," a book which is in the hands of every competent apothecary, as it contains the formulæ according to which he is required by the law of the State to prepare all such medicinal preparations as are mentioned therein.

Having these, the procedure for making the test will be as follows: Fill the pipette by suction and then quickly close the top of it with the forefinger. Raise the tube out of the sample of vinegar and let it empty out by drops exactly down to the top graduation mark. This bearing the mark of o. c. c. Then holding it over a white mug or cup let it run out exactly down to the 6 c. c. mark. Dilute the 6 c. c. of vinegar, thus measured out into the mug, with sufficient clean water to make it look about white, and then add to it about three drops of the Phenol-phthalein solution. Then, having prepared the burette by filling it up to the top, zero, or any other noted mark of graduation, with volumetric solution of soda, let the soda solution run out cautiously into the diluted vinegar, which should be constantly stirred about. As soon as the vinegar in the mug begins to darken, the soda should then only be allowed to run into it by drops. This dropping is thus continued until at last a final drop of the soda turns the vinegar suddenly to a permanent pink or cherry color, which will not disappear upon further stirring. By now reading off from the graduations of the burette the number of full c. c. divisions and of tenths which have been emptied out to bring about this change of color in the vinegar is known the per cents and tenths of acidity equivalent to true acetic acid contained in the vinegar being examined. This, if it is a pure cider vinegar and well made, will be upon the average about 6 per cent., and never under 5 per cent. If in like manner 10 c. c. of the vinegar is exactly measured off by the pipette into a small light porcelain dish, and then evaporated fully to dryness over boiling water, the number of grammes weight gained by the dish, when multiplied by ten gives the percentage of solid residue contained in the vinegar.

There are certain characteristics peculiar to the residue of a pure cider vinegar, the principal of which are the following: It will be about three per cent. in weight and never less than 2 per cent. It is always soft, viscid, of apple flavor, somewhat acid and astringent in taste. A drop of it taken up in a clean loop of platinum or of iron wire and ignited in a colorless Bunsen gas lamp flame, imparts to it the pale lilac color of a pure potash salt, without any yellow due to sodium being visible, the ignited residue left in the loop of wire will be a fusible bead of quite a good size, and it will leave a strong alkaline reaction upon the moistened test paper, effervescing briskly when immersed in an acid. The presence in a vinegar of the *slightest* trace of any free mineral acid will prevent the ignited residue leaving any alkaline reaction, or effervescing with acids. The presence of any practical amount of commercial acetic acid added, to "tone up" the strength of the vinegar, will cause the igniting residue to impart another color to the Bunsen flame, and the residue itself will have a smoky, pyroligneous taste or odor. Any corn glucose used in the vinegar will cause its residue when ignited to emit the characteristic odor of burning corn; and as the last spark glows through the carbonized mass, to usually emit the familiar garlic odor of arsenic. For the common oil of vitriol usually used in the production of glucose is now mostly derived from pyrites, which almost always contain arsenic. A glucose vinegar which has been made without vaporizing the alcohol after the fermentation of the glucose will also have a strong reducing action upon a copper salt in an alkaline solution, and also will give a heavy precipitation of lime with ammonium oxalate. A true malt vinegar always contains phosphates, and a wine vinegar cream of tartar. The presence of any acrid vegetable substance in a vinegar is known by the residue having a pungent taste, especially if before the evaporation the vinegar has been exactly neutralized with soda.

In a pure apple cider vinegar hydrogen sulphide gas will not cause any discoloration, nor will the addition of a solution of either barium nitrate, silver nitrate, or ammonium oxalate cause anything more than the *very slightest* perceptible turbidity. But the addition of some solution of lead acetate—that is, of sugar of lead—will cause an immediate voluminous and flocculent precipitation, which will all settle out in about ten minutes, leaving a clear fluid above. In most of the so-called "apple vinegars" brought into this market from other States and largely made from the refining of fermented pomace, the addition of some of this lead solution will cause but a slight turbidity, without any precipitate settling out for several hours, and even then the precipitate will not be of the same appearance as in apple cider vinegar.

Sophistications of cider vinegar that will not be detected by some one or more of the above given tests are not likely to be met with, for the simple reason that they are not profitable. To translate percentages of acid strength into the old commercial terms of grains of soda bicarbonate per troy ounce, the per cent. may be multiplied by 6.72; or *vice versa*, divide the grains by the same factor. To reduce it into grains of potash bicarbonate, 8 would be the factor to be used in like manner.

LOCATION OF CEMETERIES.

The questions how and where the dead shall be disposed of are eminently sanitary ones. The religion of all people modifies and renders traditionally sacred their method of burial. The dead should be so buried that the living may not suffer.

Our lawmakers scarcely recognize as they should the fearful dangers of the inhumation of the human bodies, dead from malignant disease with its specific germs—germs which float in the air we breathe and the water we drink; germs which freezing can not destroy; germs which, after being buried in the earth for centuries, when brought to the surface by excavations produce pestilence, and which, like vegetable seed germs buried for ages in the earth, when brought to the surface bring forth fruit, each after its kind. Cemeteries, therefore, in order to afford all necessary protection to the public health, should be properly located, *i. e.*, at a sufficient distance from towns, cities and habitations, under wise control and guarded by good laws.

In reference to the "saturated soil of a graveyard" I quote from Stephen Wicks, A. M., M. D.:

"In the autumn of 1843, in Minchinhampton, a graveyard was disturbed which had existed five hundred years. In rebuilding the church it was deemed expedient to lower the surface of the graveyard to within a foot or two of those buried. The earth so removed was of a dark color—saturated, in fact, with the product of human putrefaction—was, in the fatal hour, devoted to the purposes of agriculture. About one thousand cart loads were so employed; some on a new piece of burial ground, to make the grass grow more quickly; some as manure in neighboring fields; some on the rector's garden, and some in that of the patron. The seeds of disease were thus widely sown, and the result was such as any person of common sense might have expected. The diffusion of a morbid poison which soon followed was evinced by an outbreak of fever in this once healthy locality. The family of the rector, and the inhabitants of the streets adjoining the church-yard, were the first attacked, and were also the greatest sufferers. The rector lost his wife, a daughter, and his gardener. The patron's gardener, who had been employed in the unseemly art of dressing flower beds with human manure, also died. The children who attended the school took the fever as they passed the upturned surface of the graveyard, went home and died, but did not communicate the disease to those who came near them. Seventeen deaths occurred, and upward of two hundred children had measles, scarlet fever and various peculiar eruptions.

"When Hannibal laid siege to the city of Agrrigentum, in the southwestern part of Sicily, for the purpose of raising a wall without, which should overlook and command the city walls, he collected all the materials within his reach, and among the rest destroyed and converted to his use the tombs standing around a city very ancient and populous, and then containing 200,000 inhabitants. From the uncovering and disturbing of so many dead bodies arose a terrible pestilence, which carried off immense numbers of Carthagenians. Afflicted at the dreadful mortality, the besiegers attributed it, with the superstition of the age, to the vengeance of the gods, incensed against them for violating the repose of the dead."

Two remarks of some importance are suggested:

1. The folly of modern nations, especially in warm countries, in suffering the interment of the dead within their cities.
2. The wisdom of some ancient nations in having a dead as well as a living town.

AMO, HENDRICKS COUNTY.

A proposition to locate a cemetery adjacent to this town by the Friends' Church was met by the following petition:

To the committee appointed by Amo Preparative Meeting of Friends, on the subject of establishing a graveyard:

We, whose names are hereto affixed do earnestly, and in all kindness, protest against establishing a cemetery at or near the present limits of the town of Amo. We protest for various reasons, the chief of which is the bad sanitary effect.

I. H. George,
Martin Roberts,
E. J. Pearce,
E. F. Brown,
W. O. Brown,

A. Budd,
W. W. Ralston,
C. H. Brown,
E. B. Owen,
W. M. Conquest,

C. E. Howell,
M. M. Jester,
Wm. Beeson,
E. F. Thompson,
G. W. McCloud,

Charles McCloud,	J. A. Marshall,	Wm. Ford,
W. E. Varley,	A. J. Casner,	Emery S. Sharp,
W. H. Crose,	Thos. Mendenhall,	J. A. Owen,
W. H. White,	Jesse Kennedy,	J. M. Thompson,
Hannah H. Newman,	J. F. Dunagan,	J. C. Rollins.

By agreement of all the parties, the matter was referred to this Board, which authorized its Secretary to examine the location. He, in company with Dr. C. E. Farabee, Secretary of the Hendricks County Board of Health, visited the place June 6, 1889, and afterward made the following report:

In the matter of location of a cemetery at Amo, Hendricks County, Indiana:

In obedience to the request of the Trustees of the Friends' Church at said place, we made an investigation June 6, 1889, of the location and find that it is in too near proximity to dwellings, and in our judgment would prove detrimental to the health of the residents, and injurious to the value of property in said town.

C. N. Metcalf, M. D.,
Secretary State Board of Health.
C. E. Farabee, M. D.,
Sec'y Hendricks County Board of Health.

FORTVILLE, HANCOCK COUNTY.

Order of the Town Board of Health of the town of Fortville, Ind.:

Whereas, One Samuel Arnett is owner in fee simple of the east half of the northeast quarter of the southern quarter of section number nine (9), township seventeen (17), north of range six (6) east, in Hancock County, Indiana, and,

Whereas, Further, the incorporated town of Fortville, by its lines of incorporation, abuts the real estate of the said Arnett on each the east and south sides thereof, and,

Whereas, the citizens of said town—those who own real estate in that vicinity—have constructed their residences and water conveniences in close proximity both on the east and south sides of the said real estate of the said Arnett, and,

Whereas, Further, the said Arnett, on his own motion and solely for the profit arising out of the same, is about to establish and has partially established, a public cemetery in which to bury dead bodies; said cemetery established and about to be established, being located in the southeast corner of his said tract of real estate, above described, and in close proximity to the residences of divers citizens who live within the corporate limits of said town, all in utter disregard of the rights, privileges and health of said citizens and of said incorporated town. Therefore, be it

Resolved by the Board of Health of the incorporated town of Fortville, Hancock County, Indiana, That said cemetery located and about to be established for the burial of the dead, when the dead are therein interred, the same will prevent and destroy public health and the health of the citizens living in the vicinity of the same; and the same will be conducive and productive of ill health and disease, and,

Be it further resolved by the Board of Health of the incorporated town of Fortville, Hancock County, Indiana, acting under the directions in this regard of the State Board of Health, That said cemetery, so established and about to be used for the burial of the dead, is a nuisance and shall be abated as such for the reasons aforesaid and because the same is inimical to public health, and,

Be it further resolved, That upon the passage of these resolutions by the Board that a certified copy of this order, under the seal of the Board of Trustees of said incorporated town, who are *ex-officio* of this Board of Health, be issued by the Clerk to the Marshal of said town and the same served upon him, the said Samuel Arnett, by reading to him and in his presence and by delivering to him a certified copy of this order, and,

Be it further resolved, That upon service above stated of these requirements, the said Arnett shall neglect thereafter and refuse to regard the same, and shall hereafter permit to be buried or bury upon said real estate or any part thereof any dead body or dead bodies, he shall be guilty of a misdemeanor as provided by law, and may be prosecuted as in such cases made and provided.

I. C. SIMMONS,
Town Clerk.

It will be conceded by all, we think, that the dead should be buried outside of the limits of towns and cities. Taking this view of the subject, the Board, at a meeting held in June, decided that in matters of locating cemeteries referred to them, they would not approve of such location, if within less than one mile from the corporate limits of municipalities.

SANITARY SUPERVISION OF RAILROAD PROPERTY.

As pestilential and other contagious and infectious diseases follow the movements of the people, and as the great lines of commerce and travel are the common means of communication between the residents of the different States, it is, therefore, necessary that railroad property should receive special sanitary supervision, and especially so since our State is not provided with a system of immigrant inspection.

Railroad property causes disease in our midst in other ways than by bringing it to us over its lines from outside localities. Stock pens are frequently built within the corporate limits of towns and cities which often become offensive and disease-breeding. Stock cars, filthy with excrement and other offensive matter, are allowed to remain for hours and days on side-tracks to annoy the people with their offensive smells.

These things should not be permitted in any community. The statutes provide for the abatement of nuisances, and it is the duty of health officers to see that all laws for the protection of the public health are rigidly enforced against corporations as well as individuals.

The grounds and buildings situated within the limits of towns and cities belonging to railroads should receive the careful attention of health officers.

No stagnant water or cess-pool should be allowed to remain on the premises. The privies should be large, commodious, well ventilated, kept clean, and free from offensive odors by the use of chloride of lime or some other reliable disinfectant thrown daily into the vaults.

They should be situated at a suitable distance from dwellings, and not within fifty feet of any water supply. If a privy vault is located within this distance of a water supply it should be abandoned, cleaned, disinfected and filled with dry earth and a new one provided, located at a proper distance, and made water proof.

Depots should be properly heated, ventilated, cleaned and supplied with pure water. Those in cities should have urinals and water closets suitably located, with sufficient capacity to accommodate the traveling public, and kept so clean and free from foul odors that they will not offend the senses of the most delicate.

Water, whether its source be a well, spring, stream or lake, should not be used if there is any liability of contamination from surrounding nuisances. Passenger coaches, especially those used in transporting immigrants, should be thoroughly cleaned and purified at the end of each trip.

Their saloon closets should be kept clean and free from odors, and the floors well painted or oiled to prevent moisture soaking into the wood.

All passenger coaches should be aired, and their closets disinfected at least once each day.

Separate apartments should be provided for those suffering from tuberculosis, furnished with cups for the reception of sputa, with tank containing germicide solution number 2 (see preventable disease circular issued by the State Board of Health) for the thorough disinfection of sputa cups.

Modern research has, upon the most indisputable evidence, declared that tuberculosis is not only contagious, but preventable if the proper precautions are taken; among which the destruction of the sputa is the most important.

Printed rules covering the above points should be posted up in the general car; also, the separate compartment.

The heating of coaches should be by steam, and not by stoves; which, besides furnishing an irregular and badly distributed heat, are also a source of great danger in case of wreck.

The bedding of sleeping coaches should be thoroughly aired after use, and the practice of putting away blankets into a tight compartment after use over night is highly reprehensible, and should be made a subject of sanitary investigation.

Whenever a railroad company maintains a nuisance on its premises, or allows its property to become offensive to the citizens living in the neighborhood, local health boards should take action to have the same removed.

The Fortville Board of Health, by the following action, abated a nuisance maintained by the Bee Line (now C., C., C. & St. L. R. R.) Railway Company, by allowing stock pens in a filthy condition to remain standing within the corporate limits of the town.

ORDER OF THE TOWN BOARD OF HEALTH OF FORTVILLE, INDIANA.

WHEREAS, The Bee Line Railway Company are owners in fee simple, located in the central part of the town of Fortville, and which they, the said company, use for a public stock-pen, and which is in a bad condition at all times during the summer months; therefore be it

Resolved, By the Board of Health of the incorporated town of Fortville, Hancock County, Indiana, that said Bee Line stock pens above named will prevent and destroy public health and the health of the citizens residing in the vicinity of the same, and the same will be conducive and productive of ill-health and disease, and be it further

Resolved, By the incorporated town of Fortville, Hancock County, Indiana, acting under the directions of the State Board of Health, that said stock pens so established is a nuisance and shall be abated as such for the reasons aforesaid and because the same is inimical to the public health, and further be it

Resolved, That upon the passage of these resolutions by this board, that a certified copy of this order, under the seal of the Board of Trustees of said incorporated town, who are *ex officio* members of the Board of Health, be issued to the marshal of said town and the same served or sent to the proper authorities of the said Bee Line Railway Company, and further be it

Resolved, That upon the fulfillment of the above requirements, the said Bee Line Railway Company shall neglect thereafter and refuse to regard and remove the said stock pens, then the said Bee Line Railway Company shall be guilty of a misdemeanor as provided by law, and may be prosecuted as in such cases made and provided.

I. C. SIMMONS,
Town Clerk.

GLANDERS.

This disease has manifested itself within the year in a number of localities in the State, and in several instances horses affected with it have been destroyed. The generally accepted theory is, that it is incurable both in man and beast, and in August there was reported the death of a farmer in Parke County, who had contracted it from a horse. The following correspondence will be of interest to those interested in the study of this disease:

BELLEFONTAINE, O., Aug. 16, 1889.

Sec'y State Board of Health, Indianapolis Ind.:

DEAR SIR—I see by the Cincinnati Commercial of the 14th inst. that glanders is reported to be prevailing in Parke County, Ind., and that a farmer had contracted it from a horse, and it occurred to me that I would write you of a case which came under my observation at Hot Springs, Ark., last March. I was there during March and April, bathing for chronic rheumatism and locomotor ataxia, and met at the Palace Bath House, Dr. Paul Paquin, M. D., M. V., Professor of Comparative Medicine and State Veterinary Inspector at the State University of Missouri, Columbia, Mo., and as he had the appearance of being in good health, except a small sore on the right wrist, which looked like a small carbuncle from which the core had been removed, I asked him if it was a carbuncle, and if he was taking the baths for that. He replied that it was glanders, and then kindly gave me a history of the case as follows:

Wishing to make some experiments on some Guinea pigs, he was taking some virus from a glandered horse, and having no abrasions on his hands he did not observe his usual precaution of wearing rubber gloves. The horse rubbed his nose across his coat sleeve and shirt cuff, but as he did not notice any virus on either he gave it no further thought. In driving home, 20 miles, his cuff chafed the wrist slightly; next morning lumps appeared on his wrist and the glands of the arm, and the whole arm to the shoulder began to swell and cause much pain. He then knew he was inoculated, and said he was probably as badly frightened as any man could, but for his sick wife's sake, tried to keep up a cheerful appearance. He commenced at once to take iodide of potassium; but 20 grain doses, three times a day, made his stomach revolt. He grew worse and started to Hot Springs, where he placed himself under the care of (I think) Dr. Greenway, who put him to rubbing mercury, same as if it were syphilis, and began giving large doses of iodide of potassium, 40 grains three times a day, gradually increasing about five grains daily until, when I first met him, he was taking 80 grains three times a day and afterward 90. It was then soon dropped and arsenic substituted, but I do not know the dose. He took a hot water bath each day, followed by a vapor bath, and it was the profuse sweating produced by the bath that enabled him to take such large doses of iodide without interfering with the stomach. He showed no sign of any abnormal condition of the system when I first saw him except the slight eruption of skin on the shoulders, hips and calves, caused by the mercury and iodide of potassium; the arm and glands having assumed their normal size and condition, so far as I could see. I should have excepted also the sore of the wrist first mentioned, but that was healing nicely from the bottom and the granulations looked healthy. He felt that all danger was passed and that he would soon be all right. He told me that word from home informed him that the Guinea pig had died the 16th day.

Now, what potency the water at Hot Springs had in affecting the cure, I do not pretend to say; but I know that the hot water and vapor baths enabled him to take four or five times as much medicine in a given time as he could have done without them. While the mercury and iodide were in the system long enough to have the desired effect, the daily bath and sweating would cleanse the system and prepare it for the next day's treatment.

The Doctor is a Frenchman and had been with M. Pasteur for eight months prior to coming to America. He is a refined, intelligent and affable gentleman, and if the case and treatment interest you, and you should write him, care State University, Columbia, Mo., he will, I have no doubt, give you further details and the ultimate result.

Very respectfully yours,

J. F. McGINIS.

GLANDERS IN MAN AND BEAST.

BY P. PAQUIN, M. D., V. S.

A recent accident in dealing with that disease, and of which the *Review* gave editorially such kindly notices, prompts me to write a short article on the subject. I intended to do so later, as I am engaged in some slow original researches concerning glanders, but the many conflicting and erroneous notices of the press about the accident in question, and the apparent confusion that seems to exist in the minds even of the most conspicuous of veterinarians and physicians about the nature of the disease, have determined me to delay no longer at least a few words.

For reasons without foundation, the popular idea that glanders *in man must necessarily be fatal* seems as prevalent among veterinarians as among the laity, so much so that some of the leading men have expressed this view in unmistakable terms in letters to me and in the press. Does this come from the fact that nothing really new has appeared of late on this subject in veterinary literature, or is it because of a sort of lethergy that makes us take for granted the writings, sayings and popular notions of old time? It is, perhaps, well in practice to acknowledge the incurability of any disease of a deadly character when science and practice point toward such a conclusion, but is that a reason why medical men must stop and accept for granted this conclusion? What is there absolute in disease? If, since the beginning of the world, a disease was found uncontrollable, is it a reason to stop our inquiries and accept views a century old? Hydrophobia was beyond the reach of human skill once; is it not now mastered? It is a grave error that medical men make when they pronounce a diagnosis of fatality just because the disease under treatment is known to the world as incurable. Now I say without further comment that *glanders* in *man* is sometimes curable, and that even in the race of animals most susceptible it occasionally takes a form in which, *without* treatment, contagion becomes impossible, at least for a time. I will proceed to give evidence.

Take Ziemssen's "Cyclopedia of the Practice of Medicine," vol. III, on chronic and infectious diseases, pages 352 and 368 (American edition, published by Wm. Wood & Co., New York, 1875, edited by Albert H. Buck, M. D.) There you will find sufficient evidence to convince the most skeptical that glanders is not necessarily deadly.

Ziemssen there gives the following tabulation, written by Bollinger:

In thirty-eight cases of *acute glanders* in man, recovery ensued in one instance. In seven cases of *subacute glanders*, recovery in two instances. In thirty-four cases of *chronic glanders*, recovery in seventeen instances.

Bollinger assigns an "*absolutely* unfavorable diagnosis in *acute glanders* only; the subacute and chronic forms permitting a relatively *favorable* opinion as to the termination." Out of a total of one hundred and twenty cases of glanders in the human subject that he "succeeded in finding," the recoveries were equivalent to twenty-three per cent. In the same pages it will be found that Hauff gives account of 11.4 per cent. of recoveries; that Virchow acknowledges some cures, and that, in a word, glanders should not in man be considered always mortal. The article on glanders in Ziemssen's work is based on the authority of nearly fifty writers, among whom we find those previously mentioned, plus Greve, Kreutzer, Spinola, Gerlock, Bouley, Lafosse and others, whose names are well known to medical science.

In support of this testimony I might add the following two positive cases of glanders in man, both of whom are living today. The first occurred in 1887, in the fall of that year.

I was called to Burlington Junction, Nodaway County, Missouri, to attend officially to a contagious disease among stock. I found eight cases of glanders on four different farms, nearly all adjoining. All the cases came from or had been contracted at one and the same place originally. One of the owners, whose name is Hiram S. Pierce, had treated his two diseased horses and had been inoculated through a raw sore on the left hand. Virus from his horses' nostrils killed Guinea pigs with glanders in five weeks and seven weeks respectively. I had the horses killed. Mr. Pierce had then been in possession of them only a few weeks, if I remember well. He received them in trade from a man who called the disease distemper.

He had treated them not longer than four weeks, and when I saw him he had symptoms of glanders about fifteen days. The physician he consulted did not understand the case and so the patient was not much alarmed by the uncertain prognosis. I found induration of lymphatic courses in the affected arm, suppuration of the epitrochlean gland at the elbow, and suppuration of farcy character at the foot on the same side. The man walked to the field with me without a shoe—he could not put one on—and limped slightly. His father lived in and was the honorable Representative of Logan County, Illinois, the papers said. Mr. Pierce went there and was examined, and I was informed that the virus was tested by Dr. Rauch, Secretary State Board of Health of Illinois. He pronounced the case glanders. Then Dr. Leeds, of Lincoln, Ill., took charge of the case, and here is his letter in reply to a recent inquiry of mine concerning it:

LINCOLN, ILL., June 6, 1889.

J. H. Rauch, M. D., Springfield:

DEAR DOCTOR—In reply to Dr. Paul Paquin's letter, forwarded to me and herewith enclosed, I first saw the case mentioned (H. S. Pierce, affected with glanders) in November, 1887. Mr. Pierce was under my observation from that until April, 1888. When first seen he had a "running sore" on the left arm at front of elbow, one near the left knee, and one near the left ankle. Much stiffness and considerable swelling of the limbs involved.

For local treatment I used iodoform powder on the ulcers and applied rubber bandages. Internally, Syr. Fer. Iod. f. z. j. t. d., and Fowler's solution, beginning with m. v. t. d. for two days, then m. vj. two days and so on until ten drops were taken, then decreasing the dose in reverse order and repeating.

I take pleasure in reporting that Mr. Pierce has *completely* recovered his health. He is free from stiffness in the limbs and has his normal strength. His complete freedom from symptoms has now continued just about one year.

Courteously,

L. L. LEEDS,
Per K.

The other case is one in charge of Dr. Griffith, member of the Missouri State Board of Health, Kansas City, Mo. He contracted glanders in 1887, I think, and is still living. I saw Dr. Griffith in May at the Missouri Medical Association meeting, Springfield, Mo., and he informed me that the patient is doing fairly and at work. His lymphatic system, however, is still affected, and presents chronic lesions. The case and its history I know well, through Dr. Griffith, and it is undoubtedly glanders. Now, as to my own case, I will neither assert nor deny that it was glanders, but the trouble I know was due to inoculation of matter from a mare which had glanders decidedly pronounced. The same matter inoculated two Guinea pigs by a student here, killed one some fifteen days or so afterwards, and the other in about six weeks. Both died in my absence, and, as I had left in a great hurry and had made no arrangements for preserving the specimens, or for close examination, I can not say what was the cause of death; besides, I was not told of the death of the Guinea pigs until after my recovery. The mare died, as did three other horses and mules on the same farm, all from glanders.

It was on the 22d day of March, at Lee's Summit, Mo., that the accident occurred. While examining the mare just mentioned she blew her nose, and a great deal of matter covered a good portion of my face, my right hand and wrist, and some struck the right cuff inside and outside. The cuff was very stiff, and was immediately scraped with my pocket knife, after washing off the besmeared hand and face well. It was about 11 o'clock, A. M., and I resolved to wash better and take the cuff off before dinner, having then one more animal to examine. However, I forgot to take it off, and rode a whole afternoon with it on. That night at 10 o'clock I was about to retire for the night at the Centropolis, Kansas City, and found the first indication of danger. That right cuff had on its edge a stiff, ragged point, turned out like the tooth of a saw. On the inside part of this point was glander virus, and the besmeared, stiff, ragged point had rubbed crosswise on the wrist about ten hours. It had made a one-inch long, red (almost raw) mark like that produced by scratching with an ivory point for vaccination. The friction of this cuff tooth with the virus on had, in other words, produced an irritation sufficient to cause smarting. I washed the place well, and felt easy enough, because I had dealt with glanders before, I may say weekly, during four years, and I feared the disease little. Four days later found me on a Wabash train on my way to Columbia, my home. It was early in the morning, and I had slept fairly. My wrist was paining me some, and felt stiff. I looked at it, and found what made me shiver for the first time since the previous winter. At the very point of the irritated tract was growing a little boil, slightly yellowish. I had no cauterization agent (when opening my caustic case I found it destroyed), and I was twenty miles away from home on a slow train. I became rather fearful, and at once squeezed the vesicle. The matter looked just like that which we find in small farcy buds, and the bottom of the ulcer was indurated. I scraped this out with a pocket lance, and as soon as I reached home I dropped a few drops of boiling water in it, and in a few days it was healed. That night I had a little fever, and next day I made arrangements, under advice of two physicians, Professors Moss and McAlester, to go to Hot Springs, Ark., where I arrived six days after the inoculation.

The fifth day an epitrochlean gland at the right elbow began to enlarge and feel painful. It gradually grew larger and larger, and then the lymphatics from it became similarly involved. Some days later Dr. Greenway, one of my physicians there, discovered adenites in some glands of the neck. He and Dr. Gaines, who had charge of the case, can testify to this condition. The glands remained so for three weeks, and during all that time the temperature was one or two degrees above normal at times, and normal at others. A day or two after the healing of the first bud on the wrist, another one grew, about one quarter of an inch from it, and directly in the primitive irritated line. It became red one day, and next morning it was beginning to fill, and it was at once cauterized before virus was sufficient to gather, and, indeed, I was in that time in no mood to wait for virus to be in sufficient abundance, or for pipettes or vial to gather the infernal poison, if such it was. So I failed to make any inoculative tests or microscopic study to ascertain the nature of the disease. The last ulcer was rebellious. It took six weeks to heal it. It finally coalesced with the mark of the first one, and now there is on my wrist but one cicatrix, which will probably always show, and there remains a slightly indurated but painless gland at the right elbow. The treatment consisted of iodide of potassium from the fourth day after inoculation to the end of six weeks, and then Fowler's solution of arsenic for a few weeks longer. I began the iodide of potassium at the dose of ten grains three times a day, and in three weeks I was taking *eighty-five grains* (85) three times a day, or 255 grains daily. Besides this, I was treated with mercury in local frictions—one dram of the official ointment daily, until constitutional effects were apparent. In order to correct the injurious effects of the potassium on the stomach and head I took with it bi-carbonate of soda for the first, and a few drops of tinct. of bellad. for the last correction. I took hot baths every day, and perspired one to three hours each time. By this means the kidneys did not have to eliminate all the strong medicines, and they stood treatment well. After I returned home I continued treatment, gradually lessening the dose, and finally dropping the potassium and used Fowler's arsenic at three to five drops. I have not used any thing for about three weeks, and feel now well and strong. Now, was it glanders? I for one care not for the verdict. I did not feel like awaiting ten or twelve days for development to make a scientific and sure diagnosis. The fact that so many die from the disease is in a large measure because physicians do not know its nature and symptoms, and generally diagnose it only when too late, sometimes after death. They, too, usually think that a glandered man *must* die any way.

Now a word about glanders in animals. Is glanders always incurable in them? I know now a horse living, which three years ago inoculated three mules successively, all of which died of glanders. One Guinea pig, I myself inoculated, also developed glanders clearly and died, and the horse (a stallion) which was valuable, therefore kept in quarantine, has not today any discharge from the nose; the ulcers on the *septum nasi* are healed and have left irregular glossy-white cicatrix; the sub-maxillary glands have reduced and are hard and painless, and the horse looks perfectly healthy. He has been so for over thirteen months. I have, in the last year, repeatedly inoculated various material—very thin as a rule—from his nose, and failed always to produce any disease in susceptible stock. Nor is this an isolated case. I have two similar ones on record, and on one of them I made a post-mortem examination in 1887. I found many indurated lymphatics, but no virus.

Found portions of both lungs perfectly solid with a deposit of calcareous appearance—a cretefaction which the edge of the knife could not incise.

I have written enough though—much more than I intended to—and I fear that it is rather poor literature, as I write in haste. I hope the readers of the *Review* will forgive me this. Owing to my late trouble, I am greatly behind in my official work, and am compelled to hurry things along.

In conclusion, I extend my heartfelt thanks to the many kind friends in the profession, who so feelingly expressed their sympathies directly or indirectly to myself, my wife, or my mother and her family during our time of trial.

CENTRAL HOSPITAL FOR THE INSANE.

This institution is located three miles west of Indianapolis, on an elevated piece of ground, which is well shaded and has good natural drainage. The buildings are of brick, well built, large and commodious, and capable of accommodating about eighteen hundred persons.

They are well heated, ventilated and properly provided with fire protection. The officers and attendants are kind and obliging, and willing to show the entire system of management in detail.

The inmates, in no way, show evidence of bad treatment, but on the contrary, from their general appearance bear evidence, beyond question, that they are well cared for and that the treatment they receive is good in every particular.

The food which is given them, consisting of bread, beef, pork, mutton, butter, eggs, vegetables and groceries, was found to be wholesome, well prepared, and of the very best quality.

The patients are clean and well clothed, none are kept under mechanical restraint, this barbarous practice having been abandoned. Every day, the weather permitting, they are taken out on the grounds, under the protection of the attendants, for recreation and exercise.

When we consider the class of inmates which the management has to care for, the clean condition in which every ward and room is kept is all the more commendable. Every bed is kept clean and well provided with suitable clothing.

The water closets and bath rooms in the female department are perfectly free from foul odors, having cement floors and are easily cleaned. In the old building or male department the water closets, urinal and bath rooms have wooden floors, which have in places become soaked with urine and other liquids which have unavoidably been deposited on them; consequently the odor of decomposing matter is always present in these places. Disinfectants are liberally used, but still the offensive smell can be detected upon entering the rooms.

The plumbing, which is more or less ancient in style and workmanship, should be repaired and improved. Towers or annexes, properly ventilated, should be built, extending up the outside of the building, convenient to the different wards, in which all water closets, urinals, slop sinks and bath tubs should be placed.

These arrangements would remove all dangers from sewer gas which might escape through defective plumbing. We repeat what we have said in another place, that we do not approve of the location of water closets and urinals within the walls of an institution of this character; their place is in a special structure, built outside the walls of the main building.

INSTITUTION FOR THE EDUCATION OF THE DEAF AND DUMB.

The last General Assembly appropriated ten thousand dollars for a new building, which is to be used as a school building.

This building is now in process of construction, and when completed will somewhat relieve the crowded condition of the other buildings. It is expected, when it is finished, that the management will have sufficient room to accommodate the large number of unfortunates who have heretofore been deprived the privilege of obtaining an education, because the buildings were not of sufficient capacity to accommodate all who sought admission.

The many small and large rooms which were formerly used for school rooms can now be converted into sleeping rooms, which will afford accommodation to those now seeking admission, as well as to relieve the over crowded condition of the dormitories, which has existed for years. The sanitary condition of the Institution has been much improved within the year, by a thorough overhauling of the plumbing and house drainage. All old, worn out and dilapidated soil pipes, water closets and bath tubs have been replaced with new ones.

While the management was having this work done, they should have built an annex at the end of each building in which to put water closets and bath rooms. They could be easily and thoroughly ventilated, either by ventilating flues or windows placed on each side of the annex. They could also be completely shut off from the rest of the buildings by means of good, close fitting doors, and in this way the dangers to be feared from sewer gas would be avoided.

The time has come when water closets and bath rooms, located in the center of an inhabited building as they are here, should be forbidden. It makes no difference how well they may be built, with all modern improvements, they are constantly getting out of order, and frequently the cause of serious sickness.

The number of pupils in the Institution averages about three hundred and thirty, ranging in ages from eight to twenty years, and are educated in the various branches taught in our public schools.

The boys are given an opportunity to learn different trades, such as shoe-making, cabinet-making and printing. The girls are taught to do plain sewing and fancy needle work.

They are comfortably clothed. The food is of a substantial, wholesome character, and is well-cooked and supplied in liberal quantities.

The water supplied is abundant and pure, and is obtained from a deep driven well, located where there is no danger of contamination from surrounding nuisances.

The buildings are heated with natural gas, which insures a constant and uniform temperature in the coldest weather. There have been no deaths in the Institution within the year, and the health of the inmates has been excellent.

ASYLUM FOR THE BLIND.

This Institution is located in the city of Indianapolis, within ten minutes walk of the State House. The last General Assembly, while in session, provided for the construction of a new building (which was much needed), which will cost eleven thousand four hundred and eighty-six dollars and thirty-four cents ($11,486.34). When this building is completed the Superintendent can admit those who have made application, and have been refused admission because the buildings were not of sufficient capacity to accommodate all who sought admittance. It will also enable a large number to obtain an education, and learn trades, who heretofore have been denied this privilege, and consequently have been deprived the means of making a livelihood, and from necessity have been obliged to rely on public charity for support. The rooms are clean, well ventilated and in most cases well lighted. The beds are kept clean and well supplied with suitable covering. The inmates are comfortably clothed. The food is abundant, wholesome and well prepared.

The children, when not in school, are employed caning chairs, making brooms or in some other useful manner. The entire structure is kept in excellent condition, every part being free from offensive odors. The system of plumbing which has been perfected within a few years by the present Superintendent is a model, and it would be difficult to suggest wherein it could be improved. The house drainage is first-class. The water supply is pure and wholesome. The health of the inmates, which has been carefully looked after by Dr. R. F. Stone, has been excellent, and little sickness has prevailed amongst them the past year.

It appears from the actions of the Trustees of this Institution, that they have lost sight of the fact that it is an educational institution, to which the totally blind are sent to obtain an education.

From the fact that they have displaced a good physician, who is familiar with the idiosyncrasies and diseases peculiar to this class of people, and for several years has successfully treated them, by one who is a specialist. It is difficult to conceive the object of such a change, or wherein any benefit is to be derived, as we understand the law does not permit any operations upon the eyes of the inmates without the consent of the parents or gurdian.

A physician who is actively engaged in the practice of medicine is far more capable to look after the general health of the inmates of an institution of this character than one who is engaged in a special line, however proficient he may be in his specialty. There is no necessity for the employment of a specialist in a school of this character. What is needed is a good, general practitioner.

It undoubtedly would show good judgment on the part of the management to make such arrangements with a specialist that they could have his services whenever required.

It would be good policy to have an oculist, in connection with the regular attending physician, examine the eyes of the inmates of the Blind Asylum when they are admitted, for the purpose of discovering any complications that might be present and if not arrested would seriously affect their general health.

What we have said in this connection is also applicable to the employment of physicians to the Deaf and Dumb Asylum.

SOUTHERN PRISON.

The Southern Penitentiary, located at Jeffersonville, within a few years has grown, under the careful and intelligent management of Warden Patten, from a dirty, poorly drained, badly ventilated, disease-breeding place, into one of the best drained, best regulated and most healthful institutions in the State. Everything that an intelligent mind could suggest to improve the sanitary surroundings of the place and the hygienic condition of the inmates has been done. New drains have taken the place of old, dilapidated ones. Old ventilators have been replaced by new ones, and where needed new heating apparatuses have been put in. A large and commodious bathroom has been provided for the use of the prisoners. The cells are kept dry and clean, and free from vermin. The food is of good quality, pure, wholesome and well cooked. Each inmate is given all he can eat at meal time, and is also allowed to carry from the table what he wants. The sick are given whatever their appetites demand in the shape of oysters, eggs, etc. We would naturally expect much sickness and a large death rate in an institution of this kind, where they have to receive the character of inmates that they do; many of whom are broken down from dissipation and constitutional diseases, but such has not been the case at this place. Thirteen deaths out of an average of five hundred and fifty-five inmates is a very small number, when the character of the inmates is taken into consideration. The following is the number and causes of death for the year ending September 30, 1889: Cerebro spinal fever, 2; tuberculosis, 6; heart failure, 2; suicide, 1; pneumonia, 1. At the time of our visit there were several insane prisoners, who were confined to their cells for want of a better place in which to keep them. A building should be constructed outside and away from the others for the care and reception of this class of patients, as their maniacal ravings must constantly excite and annoy the other convicts confined in the same cellhouse with them.

STATE PRISON NORTH.

In August the Board visited and inspected the State Prison located at Michigan City. The inmates are well and comfortably clothed at all times. Their cells are large, well ventilated and heated; the furniture and bedding is sufficient and clean. They receive an abundance of food, which is well cooked and wholesome. The Board has no criticism to make on the sanitary surroundings of the premises or hygenic condition of the prisoners. The suggestion made in reference to the construction of a separate building for the care of the insane in connection with our remarks on the Southern Prison is applicable to this institution. For several years the waste matter from eight hundred inmates and the sewage of the prison has been conveyed through a sixteen-inch sewer some seven or eight hundred feet and emptied into Fish Lake Creek, a sluggish stream which runs through the northern portion of the city.

The result of dumping so much offal into such a stream has been the creation of an intolerable nuisance, which has smelled long and loud in the nostrils of the citizens of that part of the city. It has caused much sickness, such as typhoid fever, scarlet fever and diphtheria, resulting in many deaths. Through the efforts of the able Representatives and Senator, representing that county (Fowler and Bernethy and Senator Francis). assisted by such efforts as the members of this Board were able to make, the last General Assembly was induced to pass a special act appropriating twelve thousand dollars to abate this nuisance by building the prison sewer to the lake and thereby emptying the prison sewage directly into the waters of Lake Michigan.

THE MARION COUNTY JAIL.

The following is from the columns of the Indianapolis Evening News, and is a true statement of the sanitary condition of this institution:

When President Reveal declared the Marion County Jail a disgrace to the city of Indianapolis, he expressed the situation exactly. It is doubtful if its equal in filth, and as a breeder of disease, can be found among the public buildings of the State. It is a low, clumsily built, illy ventilated affair that seems to be shrinking from public gaze. Uncouth as it is outside, the inside is far worse.

The jail was built over forty years ago. The sewerage is defective. A small twelve-inch pipe carries off (?) the drainage. The walls of the building are seared and cracked, and in those cracks the festive cockroach and the nimble bedbug sport and multiply. The tantalizing grayback is a denizen of this retreat, and recently a News reporter who had occasion to talk with a prisoner saw two large lice chasing each other over the fellow's coat. The walls are whitewashed twice a month, but even this does not keep out the vermin or stifle the rank smells that pervade the entire building. Great rats race over the place. They have gnawed the window casings and the wooden doors. They are bold and saucy, and they are not afraid to be, because some of them are nearly the size of a terrier dog.

The jail is built to hold thirty prisoners, but there is usually double that number in Marion County's Chamber of Horrors, an institution beside which Dartmoor's dark hole is a fairy palace. There are sixteen cells, but of these only fourteen can be used. They are eight feet long, six feet high and about two feet wide. Bunks are ranged in these holes, four on a side, and five prisoners—one on the floor and four on the bunks—are locked up to sleep in a space too small for one man. The bedding is simply vile. Miserable mattresses, in which there is little or no straw, pillows of rough, coarse material and horse blankets for coverings. The bedding is dirty and smells rotten. Two of the cells are used for bathing purposes, but there are no bath-tubs—just vile smelling holes in the wall, and common wash-tubs on a dirty, grimy floor. The vaults are horrible; indecent is a mild term for them, and the odors emitted are nauseating in the extreme.

The female department is dark and gloomy. To place a woman there—no matter what her character may be—is an outrage on civilization. It is doubtful if there is a place in America so loathsome where female prisoners are confined. The iron bunks are dark and rusty, the air foul and fetid, and it is little wonder that the unfortunates plead that they may stand near the rusty, barred windows and breath in fresh air. This department is very small. It is heated by a huge red stove that makes the room stifling. It is littered with old benches, broken chairs and foul bedding. The vaults are ungrated from the sight of visitors. Here often are confined half a dozen women and sometimes little girls. One week in this hole is enough to kill all idea of reformation, and it is questionable if Marion County can not be prosecuted for damages for incarcerating humanity in such a place. There is no department for boys. They are thrown in with the worst criminals, and the sins they knew not of before are taught them while mingling with the thieves that are in this jail. Physicians visit the place twice a day, and only the most careful watching prevents the breaking out of pestilence. Many innocent persons are confined here for weeks, and when at last they do go free, they are loaded with vermin and probably take with them the germs of some disease.

The Sheriff's residence, of course, is not so dreadful, but it is a bad place at the best. The walls are damp and dirty, the floors are half rotted away, the rats hold high carnival in the cellar and garret, part of the cellar walls have caved in, and it is only a question of time till part of the building tumbles down. It is badly arranged and unhealthful. "I have had more sickness in my family since living here," said Sheriff King, "than since I have been married."

The jail is probably as well managed as it could be under the circumstances, with the means at command, and the prisoners make no complaint of the treatment they receive from Sheriff King and Jailer Bob Emmett.

The building and its surroundings have been condemned by the County Grand Jury time and again, but still the Commissioners have never done anything to remedy the evil.

Within the year one of the jailers died with typhoid fever and another was sick several weeks and came near dying from the same disease, undoubtedly brought on from breathing the air of this miserable place.

The Commissioners say they are unable to build a new jail but many persons think they can, by proper and judicious management.

As Marion County has a good work house, it is thought the Commissioners could appoint the Sheriff Superintendent of it and let him live there.

All prisoners could be taken to the works and certain restrictions could be made, so that there would be no additional expense for bringing prisoners to the courts, and the work house could be managed with much less expense to the county than it now is. The jail building can be torn down and some of the old material used in the construction of a new jail. The stone that is in the wall about the Court House can be used for the same purpose.

COUNTY HEALTH BOARDS.

The system of constituting the Board of County Commissioners the Board of Health for the County, has not proven satisfactory. They are required by law to elect a Secretary annually, and with this many of them seem to think their duty ends, and no further interest is taken in health matters.

The Secretary, in some instances, is selected for no other reason than that he is the lowest (not the best) bidder. He quarterly sends in a report of births, deaths and marriages, *i. e.*, he sends in a report of some births, etc., but by no means all of them, and with this he is content. The Commissioners pay no further attention to him, he draws his salary and this completes his work. County Commissioners are (or ought to be) selected chiefly because of their business capacities, and not on account of any knowledge of matters pertaining to health, or sanitation. The whole system, to make it efficient, requires revision or radical changes. The appointing power of health officers ought to be lodged in this Board, with power to remove upon proof of failure to perform the duties of the office. Under the present system the Secretary is required to make report to this office, but, in case of failure to do so, no remedy is provided, and statistics will remain incomplete and unreliable while the present system is in vogue. From some counties we receive complete returns; from others very incomplete returns. This will make the death rate appear large in some and small in others, while the population is about the same.

SCHOOL HOUSES.

Reference has already been made in this volume to a sanitary survey of the school houses of the State for the purpose of ascertaining their hygienic condition. This was attempted once before by this Board, but the blanks used for the purpose were placed in the hands of township trustees, to be filled up by them. A few fell into the hands of teachers, and the difference was at once noticeable. Those made by trustees almost invariably pronounced the school house a model in every respect, while teachers were not slow to point out serious defects and suggest improvements.

Acting upon this information the Board determined to ask teachers to make the surveys. The wisdom of this course is apparent from an examination of surveys received. Many houses are in such condition as to be utterly unfit for the purpose for which they were intended. No ventilation is provided except such as can be had from doors and windows. The heating is of such a nature as to render those near the stoves uncomfortably hot, while those in remote parts of the room are too cold in severe weather. In many instances floors are in bad repair, admitting cold air and keeping the feet of pupils cold all day.

Blackboards are placed between windows, endangering the eyes by means of the bad light. The surface of the boards are glossy and in bad condition, instead of a smooth, dead black, as they should be. The number of cubic feet of space is in some cases entirely too limited to meet the demands of the number of inmates. The site is often low and wet, and without any drainage. The water supply is from wells or springs in close proximity to privies or other dangerous sources of contamination. The water closets are without vaults, and are seldom if ever cleaned or disinfected. In some instances they are not separate for the sexes, and in a few cases none whatever are provided. Desks and seats are not suited in size and height to the pupils. All these defects are so plain that the wonder is that they are allowed to remain from year to year under our admirable school laws and school supervision. The fault is not in the system, but in its administration. Too many things foreign to the fitness of school officers enter into their selection, such as politics, location, etc. The ventilation and heating are in a measure inseparable. The proper amount of pure air should be admitted into the room heated, and when it becomes foul the arrangements should be such as to admit of discharge without causing drafts to come in conflict with the pupils.

The temperature should, as nearly as possible, be uniform in all parts of the room. When the heating is by stoves, a sheet-iron or zinc protection should be placed around them. One of the principal objections to stoves is the want of method for introducing fresh air. Almost any ordinary stove can be altered however, at moderate expense, so as to give a large supply of fresh warmed air. As has already been said, a screen should be placed around the stove; it should reach to the floor and be as high as the stove. Under the floor a pipe is to be led from the space enclosed by the screen to the outer air; the pipe passes through the house wall, and may have a valve at any convenient place.

The requirements for good ventilation in a school are that the air shall be furnished in a fresh volume of from 40 to 100 cubic meters (1,400 to 3,500 cubic feet) hourly to each scholar. If the room is spacious, there may be 300 cubic feet of space per scholar, so that the whole air contents of the room are required to be evacuated from five to twelve times an hour, while if the room is of moderate size, say 200 feet per head, the change must go on faster,the entire contents must be changed once every eight and a half minutes. And this can be done without causing a draft. There should be about fifteen square feet of floor space for each inmate of the room.

The blackboards should be placed so as to receive a good light; if put between windows this is not the case, and the eye is fatigued by the bright light at the side. Polished, brilliant, dazzling surfaces or light colored surfaces on which the sun is shining, should never catch the eye while at work.

The faults in school desks and seats which tend to produce deformity and defects of sight are the following:

1. Desk too low, causing a forward stoop, with tendency to congestion of the head and formation or increase of near-sight.

2. Desk too high, causing undue elevation of one shoulder, usually the right, with a tendency to spinal curvature.

3. Desk too far from the seat, with stoop of the body, injuring the eyes. Both here and in No. 1 there is danger of injuring the health by compression of the abdomen and chest, dyspepsia, small chests, round shoulders.

4. Flat desk-lid, interfering with freedom in writing, disadvantageous as respects receiving light, and compelling the child to hold up the book in order to see.

As to seats, we have:

5. Seat too high, so that the feet are not supported and the legs grow weary.

6. Insufficient support for the backs, causing fatigue and improper attitudes, and consequent tendency for the spine to yield and take a side curve.

7. Seats not hollowed out suitably, causing pain and restlessness.

8. Well proportioned desk and seat, not adapted to the age of the child using them.

The following is the form of blank sent to the teachers:

JOHN N. TAYLOR, M. D., Pres. CHAS. N. METCALF, M. D., Secy.

STATE OF INDIANA,
DEPARTMENT OF PUBLIC HEALTH,
INDIANAPOLIS, September 10, 1889.

To County Superintendents of Schools:

Your attention is respectfully called to the accompanying letter from Hon. Harvey M. LaFollette, Superintendent of Public Instruction. In order to accomplish the object, I would ask that you have these blanks placed in the hands of the teachers, with the request that they answer all the questions, and when filled out return the same to this office.

Correct answers to these questions require but little time and labor, and as all methods of improvement are based upon accurate knowledge, may we not confidently expect you cheerfully to do a part of this important work?

C. N. METCALF, M. D.,
Secretary State Board of Health.

STATE OF INDIANA,
DEPARTMENT OF PUBLIC INSTRUCTION,
INDIANAPOLIS, September 9, 1889.

CHAS. N. METCALF, M. D.,
Secretary of the State Board of Health:

MY DEAR SIR—I desire, through you, to call the attention of our State Board of Health to the unsanitary condition of many of our school buildings and their surroundings.

Having given some time and attention to the investigation of this subject, I am fully assured that an astonishing revelation would be the result of a general exhibit of the facts that might easily be collected, relating to drainage and the condition of the school-yards and wells, and the heating, lighting and ventilating of the school-houses, within which more than five hundred thousand childen are spending fully one-third of their time.

There can be no doubt that the defective lighting of public school-houses has had much to do with the great increase of defective eyesight so noticeable in recent years.

The school-yard well is a prolific source of contagious diseases. But little over one-half of the school-yards in the State are supplied with wells, and but a small percentage of these are ever cleaned. Out-houses are frequently badly built and located, and the natural drainage is such as to lead to direct contamination of wells.

The condition and situation of wells, springs, out-houses, school-yards and their immediate environments, as affecting the health of these children, and of entire communities, should be so thoroughly investigated, and by those having authority and whose duty it is to act, as would result in awakening our people to the importance and necessity of protecting our children, our homes and our communities from the ravages of disease which, no doubt, in many instances owe their origin to the defective sanitary conditions of our school buildings and their surroundings.

Very respectfully,

HARVEY M. LAFOLLETTE,
Superintendent Public Instruction.

SANITARY SURVEY OF SCHOOL-HOUSE.

(If in city, give name of building, street and ward.)

....

In District No. ....

Township ....

County ....

By ....
Teacher.

1. Size of house? ....
2. Is it brick or wood? ....
3. Size of school-room? ....
4. Height of ceiling ....
5. Number of doors? ....
6. How many windows? ....
7. Are the windows to the right or left, behind or in front of the scholars, and how high from the floor? ....
8. Is it on high and well drained land, and are there any shade trees? ... .

9. What is the size of the yard? ....
10. Does water ever stand in yard or beneath the house? ......
11. Is the house well ventilated? ....
12. How ventilated? ....
13. Is it well heated, and how?
14. Are the blackboards placed between the windows? If not, what direction are they from the windows? ....
15. Are the surfaces in good condition? ....
16. What is the source of the water supply? If from a well, state whether it is driven or dug.........
17. If from wells, are they situated near any privy vaults, stables, sink drains, or cess-pools? Give distance.........
18. Is the water-supply from high or low ground? ....
19. Do you believe the water to be pure and healthful?.........
20. Are there any privies belonging to the school-house?.......
21. Are they in good order? ....
22. Have they vaults? ....
23. How often cleaned or disinfected? ....
24. How many feet from school-house? ....
25. Are they separate for the sexes? ....
26. Are they odorless, and what means of disinfection are in use? ....
27. Are there any offensive or dangerous nuisances near the school-house? ....
28. Are any rules requiring pupils to be vaccinated before attending school enforced? ....
29. Are pupils from families where infectious or contagious diseases are prevailing excluded from school, and by whose order? ....
30. Are the doors hung to swing outward or inward, and how quick can the entire building be cleared of pupils? ......
31. Is it a suitable house for the district? ....
32. How many pupils can be comfortably seated in the house, and what form of seats are used? ....
33. What is the average daily attendance? ....
34. How many of your pupils are near-sighted? ....
35. Are there curtains or blinds to the windows? ....
36. How many of your scholars study physiology and hygiene? ....
37. What suggestions can you make to improve the hygienic condition of the school?? ....

PLAN OF PREMISES.

(See Illustrative Plans and Explanations.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
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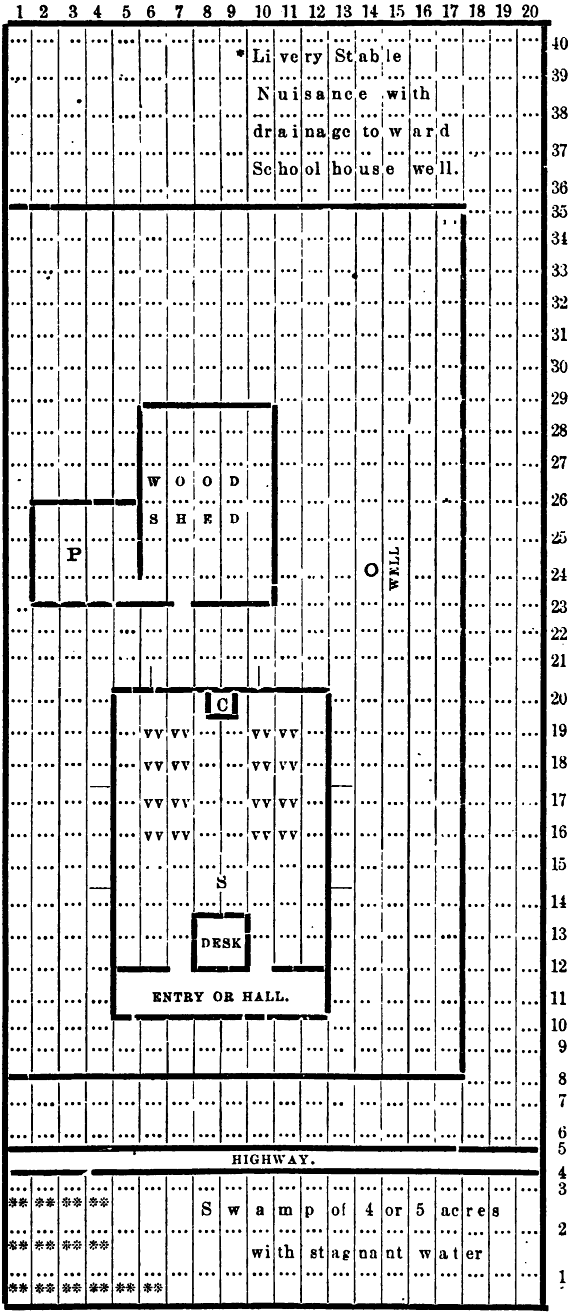
Scale . . . . . . feet to square. **Front: N. E. S. W.**

ILLUSTRATIVE PLAN OF PREMISES.



Scale of 3 feet to the Square. Front: ═ ═ S. ═

SANITARY SURVEY OF SCHOOL-HOUSE.

(If in city, give name of building, ward and street.)

....

In District No. ....

Township ....

County ....

By ....
Teacher.

By authority of the State Board of Health of Indiana.

EXPLANATION.

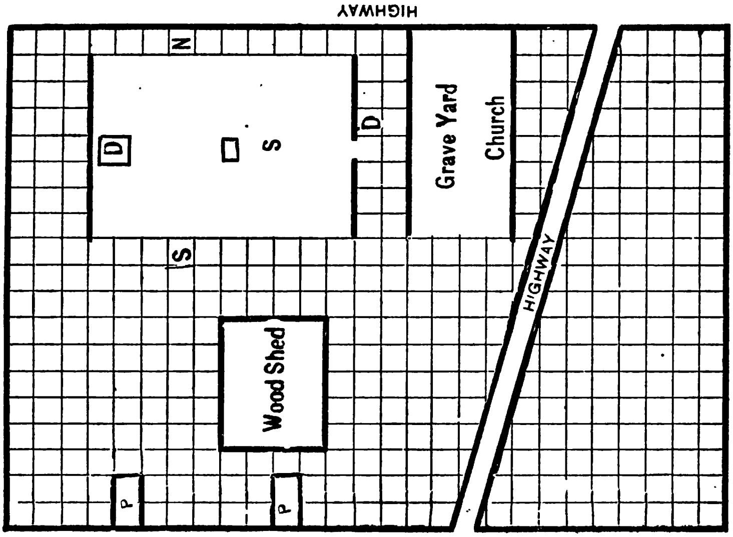
The teacher is requested to make a plan of the house and surroundings similar to the illustrative plan given. No particular nicety is required in making a plan of the house and surroundings; simply a sketch that will illustrate the points desired, no matter how crudely done. The size of the yard and the distance of any nuisance outside the yard may be estimated.

The spaces represent areas of three feet square. The house then would be 24x30 feet; woodshed, 15x15; privy, 9x12, etc. The V is used to represent the seats, and it should point in the direction the pupils face.

Nuisances outside the school grounds should be indicated, if near the same, as shown in diagram.

In the plan, S indicates location of stove; C, the chimney, P, the privy; the little dash (—), the location of windows. The other markings are self-explanatory. The teacher may use any scale to the square that may be preferable, but be sure and state, below the plan, what scale is used.

To show which way the house fronts, strike out the unnecessary points. Example: If it points south, strike out N. E. W.; if southeast, N. W.



Scale 3 Feet to Square

Fig. 2.

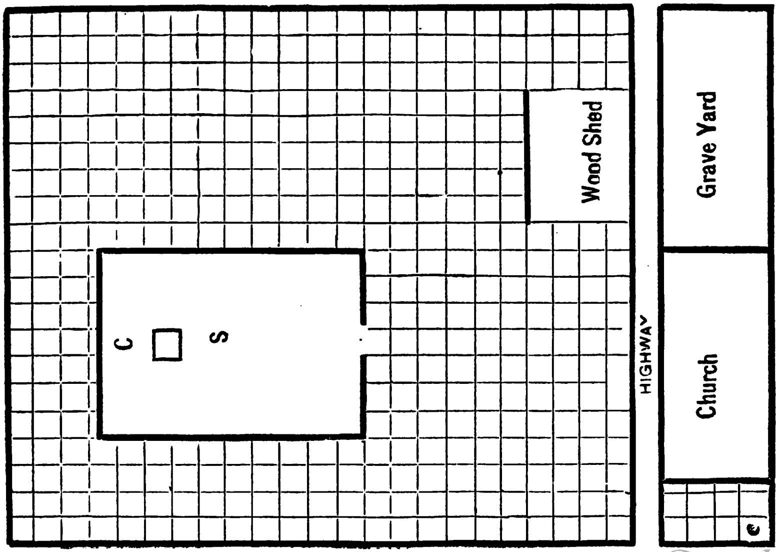
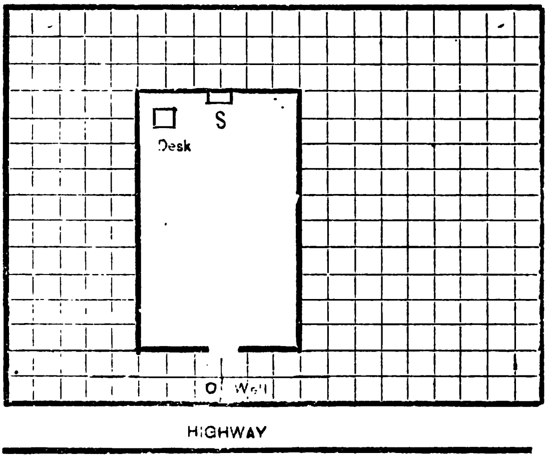


Fig. 1.



Scale 3 Feet to Square

Fig. 3.

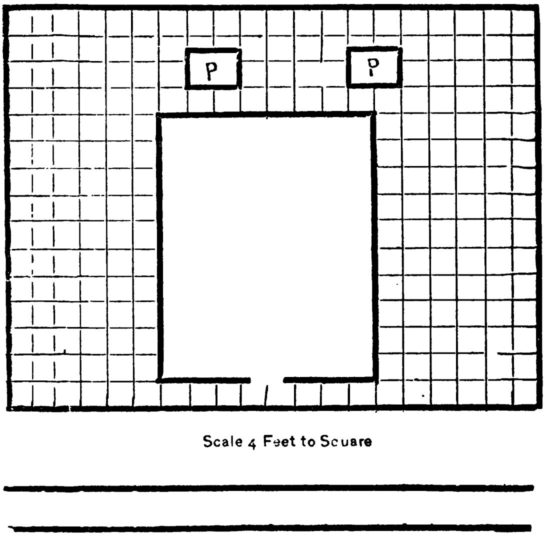
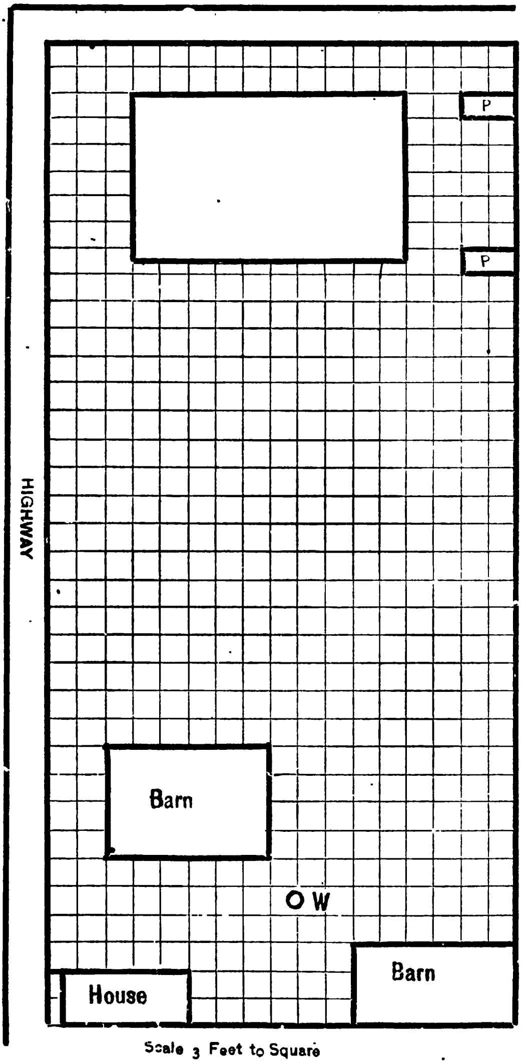


Fig. 4.



Scale 3 Feet to Square

Fig. 5.

Figures 1, 2, 3, 4 and 5 are presented for the purpose of showing some of the sources of pollution of the water supply of our district schools, and the close proximity of dangerous nuisances to the school buildings.

The teacher who sent in figure 1 says, "at present we get water in the bed of the creek where a spring oozes up out of the gravel, about three-eighths of a mile below the school house and grave yard, and is doubtless contaminated by the grave yard, which is on the banks of the creek at the school house." The location of the spring is not shown. We can not understand how school authorities, generally men of good character and standing in the localities in which they reside, can so far forget their responsibilities to their families, their neighbors and humanity in general, by allowing nuisances to exist on school grounds that are entirely under their control. A glance at the cuts should convince any intelligent person, that our common schools are surrounded by many dangers to the public health.

Sanitary Survey of School Houses.

COUNTIES.	10		11		13		14		15		19		20		21		25		27		28		29		31		34
	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	
Adams	..	1	..	1	..	1	..	1	1	..	..	1	1	..	..	1	1	..	..	1	..	1	..	1	1	..	..
Allen	9	6	6	9	12	3	5	10	10	5	9	6	15	..	8	7	13	2	4	10	3	12	8	4	11	4	6
Bartholomew	7	19	17	9	23	3	7	19	20	6	18	8	26	..	21	5	25	1	2	24	1	25	14	12	24	2	12
Benton	13	43	21	35	47	9	14	42	53	3	30	35	56	..	36	20	48	8	7	49	2	53	18	35	48	8	24
Blackford	1	..	..	1	..	1	..	1	..	1	1	..	1	..	..	1	1	..	1	..	..	1	..	1	..	1	..
Boone	22	66	32	56	55	33	23	65	39	49	31	57	82	1	40	48	85	1	7	81	2	86	30	58	64	24	54
Brown	2	9	4	7	8	3	2	9	5	6	9	2	10	1	5	5	9	2	3	8	..	11	5	6	10	1	4
Carroll	15	58	29	44	64	9	40	33	42	31	53	20	73	..	48	30	69	4	3	70	3	70	28	44	54	19	31
Cass	20	42	32	31	54	8	19	43	41	21	43	19	61	1	33	28	58	3	2	60	2	60	23	69	43	19	51
Clarke	7	37	22	22	35	9	15	29	24	18	32	12	42	3	20	20	32	8	2	42	..	45	20	24	36	8	17
Clay	3	17	11	9	18	2	2	18	8	12	13	7	19	1	8	11	17	2	3	17	..	20	7	13	15	5	39
Clinton	5	26	12	19	24	7	13	18	21	10	19	12	31	..	19	12	29	2	2	29	1	30	14	17	25	6	21
Crawford	3	18	7	14	19	2	4	17	12	9	16	5	12	8	2	12	10	2	..	21	..	21	6	15	13	8	13
Daviess	8	29	17	20	31	6	8	29	23	15	23	14	26	11	15	11	19	7	4	33	1	36	13	19	24	13	23
Dearborn	4	44	18	20	43	4	11	37	27	21	38	10	48	.	26	22	37	11	..	47	9	40	28	20	34	14	71
Decatur	..	1	..	1	1	..	..	1	1	..	..	1	1	..	1	..	1	..	..	1	1	..	..	1	1	..	..
Dekalb	5	22	7	20	24	3	7	20	19	8	19	7	27	..	19	8	25	2	2	24	8	20	16	11	27	..	34
Delaware	6	12	10	8	16	2	12	6	14	4	10	8	18	..	13	5	19	4	2	16	5	14	11	6	14	2	7
Dubois	15	87	51	49	91	13	38	64	61	40	63	38	74	28	43	29	61	12	4	96	26	73	75	25	77	23	83
Elkhart	..	1	1	..	1	..	..	1	1	..	1	..	1	..	..	1	1	..	1	..	..	1	1	..	1	..	..
Fayette	6	26	16	17	28	3	17	15	22	10	20	12	32	..	20	12	30	2	..	32	1	31	12	20	22	10	12
Floyd	3	17	18	2	19	1	7	13	18	2	16	4	19	1	10	9	18	1	..	20	2	18	12	8	18	2	8
Fountain	3	25	15	13	27	1	9	19	17	11	23	5	25	3	12	13	18	12	1	28	1	27	11	17	25	3	10
Franklin	5	9	9	5	13	1	6	8	8	6	11	3	14	..	9	5	13	1	..	14	..	14	7	7	10	3	5
Fulton	..	1	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	..	..	1	..	1	1	..	1	..	5

Gibson	6	19	6	18	19	5	14	10	11	13	14	10	22	2	7	15	17	5	1	23	1	23	14	10	6	18	13
Grant	3	23	11	16	22	4	5	21	15	11	17	9	26	..	11	15	21	5	2	24	2	24	10	16	15	11	10
Greene	13	83	31	65	77	19	27	69	52	43	73	23	67	30	35	31	62	4	4	91	1	93	25	70	71	25	27
Hamilton	18	79	27	70	89	10	21	77	65	35	55	40	98	1	58	40	94	3	1	98	3	95	34	63	62	37	55
Hancock	3	9	5	7	12	..	1	11	9	3	4	8	12	..	8	4	12	..	..	12	1	11	10	2	9	3	3
Harrison	..	14	3	11	9	5	2	12	9	5	9	5	9	5	3	6	9	..	1	13	1	13	7	7	12	2	9
Hendricks	8	18	4	22	22	4	11	15	19	7	14	12	26	..	17	9	26	..	4	22	1	25	11	15	17	9	13
Henry	11	42	8	44	44	7	13	39	38	14	40	12	52	..	31	21	49	3	3	48	2	50	21	31	40	12	20
Howard	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Huntington	11	34	20	25	35	10	8	37	30	15	29	16	45	..	25	20	44	1	..	45	3	42	23	22	34	11	18
Jackson	15	44	13	46	49	10	29	30	32	27	40	19	54	5	33	21	46	8	3	56	3	56	22	37	42	17	37
Jasper	7	22	2	27	28	1	13	16	21	8	19	10	29	..	20	10	27	2	2	27	2	27	11	18	21	8	9
Jay	8	32	9	31	32	8	11	28	33	7	27	13	37	3	21	16	35	2	..	40	3	37	22	18	25	15	16
Jefferson	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Jennings	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Johnson	7	18	6	19	20	5	10	15	9	16	11	14	24	1	12	13	24	1	2	23	3	22	7	18	18	7	31
Knox	5	76	21	60	68	14	40	41	50	31	53	28	78	3	51	27	72	6	10	71	3	76	59	20	64	16	48
Kosciusko	6	29	6	29	32	3	18	17	27	7	28	7	34	..	20	15	34	1	2	33	2	32	18	16	26	8	11
Lagrange	11	56	17	50	57	10	14	53	37	28	49	16	65	1	29	36	61	4	5	60	3	63	40	25	45	21	51
Lake	1	6	..	7	7	.	3	4	3	4	3	4	6	1	2	4	3	3	1	6	1	6	5	2	5	2	..
Laporte	7	27	8	25	32	1	12	21	26	8	26	6	33	..	28	5	29	4	1	32	2	31	21	12	31	2	12
Lawrence	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madison	11	32	7	36	37	6	5	38	24	19	28	14	43	..	24	19	40	4	2	43	7	36	23	19	30	13	24
Marion	12	54	17	50	62	8	33	34	48	18	47	19	66	..	49	18	64	2	2	64	13	53	42	24	55	11	42
Marshall	7	34	12	29	34	7	5	36	20	21	33	8	41	1	21	19	29	12	1	40	4	39	28	8	30	11	33
Martin	4	25	..	29	26	3	6	23	19	10	25	4	11	19	4	10	5	8	..	29	3	26	10	19	26	3	17
Miami	19	35	9	40	47	1	21	33	26	23	38	11	48	1	27	20	45	2	1	48	1	48	29	25	36	13	38
Monroe	3	26	5	24	27	1	11	18	18	10	25	3	19	10	10	12	15	6	2	25	3	25	11	18	23	6	4
Montgomery	10	55	11	54	60	5	16	49	50	14	52	13	64	1	48	17	61	2	2	63	2	63	26	38	59	6	31
Morgan	12	31	8	35	38	5	29	14	26	17	25	16	36	8	9	33	19	17	1	42	1	41	9	33	32	11	23
Newton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Noble	12	43	13	41	48	5	21	32	33	21	41	11	54	..	34	20	47	7	1	53	2	52	26	28	42	12	28
Ohio	2	13	3	12	13	2	7	8	12	3	8	7	15	..	12	3	13	2	1	19	4	11	14	1	14	1	15
Orange	4	25	7	22	28	1	11	18	21	8	20	9	15	14	8	8	9	6	2	28	2	27	13	16	27	2	23
Owen	3	12	..	15	14	1	7	8	8	7	12	3	9	6	8	2	8	1	..	14	..	15	5	10	14	1	12
Parke	8	37	6	39	43	2	19	25	32	13	30	15	42	4	24	19	39	4	3	42	4	42	17	28	39	6	34
Perry	1	10	..	10	10	..	..	10	8	2	3	7	6	4	4	2	6	..	..	11	..	11	2	9	9	2	16
Pike	2	43	3	42	38	7	11	34	29	16	37	8	26	20	10	15	19	6	2	43	..	45	26	18	29	16	19
Porter	16	41	7	49	53	3	20	37	37	18	45	11	57	..	31	26	37	20	3	54	6	50	84	24	48	8	25
Posey	11	55	10	56	61	5	41	25	45	21	39	26	60	6	36	24	49	11	1	65	8	58	33	33	55	11	38

Sanitary Survey of School Houses—Continued.

COUNTIES.	10		11		13		14		15		19		20		21		25		27		28		29		31		34
	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	
Pulaski	1	2	1	2	3	. .	. .	3	2	1	3	. .	2	1	2	. .	1	2	. .	8	. .	3	2	1	2	1	. .
Putnam	10	44	2	52	47	7	19	35	37	17	33	18	46	8	30	17	41	6	1	54	. .	54	28	26	42	12	18
Randolph	16	75	32	59	82	9	14	77	58	31	72	16	91	. .	85	11	90	2	4	88	4	87	58	32	82	10	26
Ripley	9	34	7	36	41	2	7	35	29	14	28	14	41	2	31	11	36	6	1	42	8	36	18	24	34	9	27
Rush	8	35	14	29	39	4	29	15	38	4	22	21	43	. .	30	14	39	2	1	42	. .	41	24	17	37	6	15
Scott	4	11	3	12	7	8	3	12	4	11	13	2	13	2	3	10	12	1	. .	15	. .	15	4	11	9	6	14
Shelby	1	7	. .	8	6	2	3	5	6	2	4	4	8	. .	5	3	8	. .	. .	8	. .	8	6	2	5	3	5
Spencer	2	15	1	16	14	3	13	4	13	4	12	4	17	. .	8	9	14	3	. .	17	2	15	7	10	12	5	13
Starke	2	12	3	11	13	1	1	3	13	1	12	1	12	. .	9	3	10	2	. .	14	. .	14	5	9	11	3	8
Steuben	4	53	23	34	56	1	20	86	47	10	47	10	55	2	45	10	51	4	. .	56	3	53	24	31	50	6	27
St. Joseph	22	66	27	59	82	4	19	66	57	34	65	21	86	. .	55	31	80	6	1	85	13	73	68	17	76	11	42
Sullivan	4	5	3	6	8	1	5	4	4	5	6	3	9	. .	5	4	9	. .	1	8	. .	9	3	6	7	2	38
Switzerland	1	3	1	3	3	1	. .	4	1	3	3	1	4	. .	. .	4	3	1	1	3	. .	4	1	3	4	. .	2
Tippecanoe	3	8	4	7	10	1	2	9	10	1	9	2	11	. .	6	5	10	1	. .	11	1	10	2	8	10	1	6
Tipton	2	8	3	7	9	1	2	8	6	4	6	4	10	. .	5	5	9	1	2	8	2	8	1	9	7	3	6
Union	3	32	19	20	35	3	25	14	25	12	28	10	39	. .	21	18	38	1	. .	39	5	34	30	9	31	8	36
Vanderburgh	1	7	3	5	7	1	6	2	3	5	6	2	8	. .	6	2	8	. .	1	7	. .	8	6	2	7	1	3
Vermillion	6	57	8	55	59	4	50	13	29	3	45	15	62	1	44	18	58	4	1	62	2	62	18	44	51	12	32
Vigo	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Wabash	14	58	27	45	65	7	25	48	51	21	57	15	71	1	35	36	68	3	3	71	3	71	28	45	59	13	35
Warren	3	36	4	35	38	1	12	26	30	9	26	12	39	. .	33	5	34	5	1	38	1	38	15	24	35	4	18
Warrick	. .	1	. .	1	1	. .	1	. .	1	. .	1	. .	1	. .	1	. .	1	. .	. .	1	. .	1	. .	1	1	. .	. .
Washington	6	64	7	63	67	3	35	35	40	30	59	11	44	26	23	20	38	4	9	61	. .	70	23	48	53	15	27
Wayne	8	55	14	49	55	8	24	39	45	17	38	24	62	. .	42	21	61	2	1	62	. .	63	22	41	45	16	40
Wells	27	74	18	83	81	19	15	86	58	43	74	23	96	5	40	58	89	9	3	97	. .	100	20	83	65	35	66
White	12	33	7	38	42	3	11	34	31	14	36	9	41	1	22	21	39	5	3	43	1	44	21	25	35	10	16
Whitley	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Total	597	2,571	894	2,248	2,773	389	1,112	2,050	2,030	1,093	2,183	954	2,933	253	1,735	1,226	2,607	329	147	2,920	208	2,949	1,481	1,654	2,439	702	1,833

The foregoing is a tabulated statement of sanitary surveys of school houses, so far as reports have been received. It will be seen that the following counties made no returns whatever, viz.: Howard, Jefferson, Jennings, Lawrence, Vigo and Whitley, and the following reported only one each, viz.: Adams, Blackford, Decatur, Elkhart, Fulton and Warrick. The only excuse made for not attending to this important matter is that County Commissioners (the County Board of Health) refused to make any allowance for the necessary postage.

Reports were received from 3,186 schools, which are not more than one third of the total number. However, being from all parts of the State, they will serve as an index to all the rest.

Eighteen per cent. of the school houses are on low ground, and need drainage to make them suitable for a shool house site. Many of them are not fenced, and are roaming places for cattle and hogs.

Seventy-one per cent. are improperly ventilated, *i. e.* no provisions are made for ventilation except such as is afforded by windows and doors, and in some instances, as teachers report, "by broken glass in windows," "by broken transoms," or "by cracks in the floor."

Twelve per cent. are not properly heated, either because the stove is too small or because it is not located in the proper place.

In 34 per cent. of the houses, blackboards are placed between the windows, thus endangering the eyesight of the pupils on account of improper light, 35 per cent. of the blabkboards have poor surfaces, 30 per cent. have water supplies that are near some nuisance, rendering them unsafe for use. Quite a considerable number have no wells or springs on the premises, and water is carried from neighboring wells, in some instances from a distance of three-fourths of a mile.

Ten per cent. have no privies. The following answers to question 20 are given: "No; woods near by." "No; take to the brush." "No; woods on two sides of the house and sexes go in opposite directions;" 41 per cent. of the privies are in bad condition, frequently reported as having no vaults, and never cleaned nor disinfected; 11 per cent. of the privies are not separate for the sexes, both using the same apartment. It is needles to say that this is simply disgraceful, and tending to unchastity and immorality. Esthetics should be taught as well as grammar or geography; 4.5 per cent. are reported as having some kind of dangerous nuisance near them.

Only 6 per cent. require pupils to be vaccinated before entering school; 52 per cent. are reported as having no rules requiring pupils coming from families in which contagious or infectious diseases are prevailing, to be excluded from the school.

Twenty-two per cent. of the houses are not suitable for the district, being either too small or seriously out of repair; 1,833 pupils are reported near sighted. This is not strange, when, as is shown, in many cases (34 per cent.), blackboards are between the windows, and windows are without either shutters or curtains.

In answer to question 37, what suggestions can you make to improve the hygienic condition of the school? the replies are such as to warrant us in making some quotations: "The removal of the school site, and the erection of a new building;" "School desks should face a blank wall and the teacher's desk; as these are arranged the pupils on one side face the morning sun, and the other the afternoon sun; there are no blinds or shades. There is a bench placed around the wall used for a starter, but it is too far away from them and too low, and not suited to that use any way, and then there is the row of desk seats without a desk in front, the whole length of the room on either side, that we have to use; the pupils face each other on opposite sides of the room, and are side by side, the length of the room on the same side. I have suggested, reasoned and persuaded, concerning the matter, but have availed nothing." "My report suggests a thorough cleaning up, a new and model school building, graded grounds, etc." "More comfortable clothing for the children; would suggest that some take more frequent baths; there could be more suggestions in this direction, but I do not wish to assume the parents' responsibility." "The school yard should be fenced so that the hogs could not root up the ground and make it so uneven for playing." "May God deliver me from ever keeping another school." "New privies, fewer in a room to each teacher, better drainage and graveling of grounds." "The house is very old and is very much out of repair, and the best suggestion I can make is to build a new house." "By encouraging the pupils to keep their hands and faces clean, also their bodies." "At present we get water in the bed of the creek, where a spring oozes up out of the gravel, about three-eighths of a mile below the school-house and graveyard, and is doubtless contaminated by the graveyard, which is on the banks of the creek at the school-house. We need pure water."

The evils resulting from ill ventilated rooms can not be calculated. As will be seen from extracts already made, children, whose bodies are almost strangers to water and contain seeds of disease, are kept in such rooms, and all are compelled to breathe the air laden with the exhalations and emanations from such bodies.

The evils of non-ventilated school-houses make their impress upon the pupil. The windows and doors must be closed to keep out the cold, and with it, in most of our school-houses, is excluded the health-giving oxygen so necessary to life. Parents who would rave with unbridled indignation if their children were deprived of a small portion of their daily food, fold their hands, so to speak, in placid inactivity and allow them to suffer hour by hour for a little fresh air. The township builds a large box, and into it, regardless of physical results, are huddled the children for several months in the year, for the public appreciation of the simplest requirements of healthful school life has not sufficiently crystalized in many places to prevent this criminal and unchristian practice. The building committee that constructs a school-house without making ample provision for ventilation is guilty of a crime that ought to be punished by a long term of imprisonment at hard labor.

The importance of pure air in the maintenance of healthful physical functions in the human system, especially in childhood, has been demonstrated over and over again, so that this part of the question admits of no controversy; and if our school government is too indifferent to rescue the children from their perilous environments, it is time that the system be reconstructed. If the fault is not with the system, it must certainly be charged to malfeasance in its administration. At any rate there are grave errors to be corrected, and non-ventilation is not the only one which can be found in the school affairs of every township.

The ventilation of school-rooms, however, is an essential, bearing so directly upon the health of the pupils that no excuse, apology or explanation should be accepted by any parent in its stead.

We tender our thanks to the teachers who so kindly aided us, to the County Superintendents of Schools for the interest they manifested in the work, and to Hon. Harvey M. LaFollette for valuable assistance rendered the Board.

STATE OF INDIANA,
DEPARTMENT OF PUBLIC HEALTH,
INDIANAPOLIS, Oct. 31, 1889.

J. L. Clark, Esq., President School Board, Danville, Ind:

DEAR SIR: The State Board of Health, with a view of bettering the sanitary condition of school houses, prepared a blank for a sanitary survey of all the school houses in the State.

These blanks were sent to county superintendents of schools, and by them distributed to the teachers, with instructions to answer the questions propounded and return them to this office.

Prof. Thos. A. Gossett, County Superintendent of Hendricks County, placed one of these blanks in the hands of Prof. A. Jones, Superintendent of the schools of Danville, who, in answer to question No. 37, "What suggestions can you make to improve the hygienic condition of the schools?" made the following remarks: "The attention of the Board is respectfully called to the following existing conditions: The privy vaults are fifty-four feet from the well from which drinking water is obtained. Time unknown when vaults were cleaned—not lately, however. No investigations have ever been made as to a possible contamination of the well from the vaults. Lime is used for disinfection. Ventilation is by doors, windows and transom over the doors, and for upward current, ventilator in wall near the floor, about fourteen inches square, seventy-five per cent. of which is taken up by the ornamental iron work over the mouth of it. No means of driving air through by fans; have simply to trust to draft. Heating for each room is by a large, round, oak stove, placed on one side of the room in a niche in the wall.

"From the stove to the first row of seats is from four to five feet; to the last row, twenty-four feet. In half of the rooms the stove is near the door in one corner, so that the seats are from five feet to thirty or thirty-five feet from the fire. Of course, it is utterly impossible to keep children comfortable under such conditions. In room No. 2 the average daily attendance is upwards of fifty, and when all are in (fifty-seven) there is less than 170 cubic feet of air space to the child. Even now, with door and window open, the air is stuffy, odors marked, exhalation from the bodies of the pupils very apparent."

The following letter accompanied the report:

DANVILLE, IND., Oct. 10, 1889.

To the President of the State Board of Health,
Indianapolis, Ind.:

DEAR SIR: I herewith send you a statement of the sanitary condition of our schools. I should be pleased to have your answer to the following questions, taking into consideration the size of our rooms and means for ventilation:

How many cubic feet of space should be allowed for each child?

What do you think of our facilities for heat and ventilation?

How many children should be placed in each room under the existing conditions?

I am not at all pleased with the existing condition of things.

Very truly yours,
A. JONES.

To this letter the following reply was sent:

Professor A. Jones, Superintendent Schools, Danville, Ind.:

DEAR SIR—Sanitary survey of your school-house, together with note, received. Thanks for your promptness. Replying to your interrogatories, will say:

1. The best authorities allow 240 cubic feet to each pupil.
2. Your facilities for heating and ventilation are wholly inadequate.
3. Not more than forty-five children should be placed in each room under favorable conditions, but it is difficult to say how many should be placed in the rooms under "existing conditions."

I am at a loss to know why it is that school authorities do not take steps to remedy such glaring defects as you point out in your survey. The heating must be of such a nature as to roast some and freeze others. The ventilation and location of the blackboards are evidently bad. The privy vaults are in too close proximity to the well to be safe. But because no immediate visible effects are seen no improvements are made.

I hope to be able soon to visit your city, and will be glad to make a personal inspection of your school-house.

Thanking you again for your promptness, I am

Yours truly,

C. N. METCALF,

Secretary.

The foregoing letter was published both in the Hendricks County *Republican* and the Hendricks County *Gazette.*

The Board also received the following letter, which explains itself. It is proper to say in this connection that a majority of the School Board deny authorizing any one to write the same, as is claimed by its author:

DANVILLE, IND., October 19, 1889.

C. N. Metcalf, Secretary State Board of Health:

The school-house here was built by Mr. T. J. Cofer and myself. We employed men by the day, and superintended them ourselves. The house is an exact model of the Eleventh Ward school-building at Indianapolis, except in that building the ventilation is through the floor. In this a large register is placed on the floor at the lower end of the ventilating or hot-air flue, making it the same as an open grate or fireplace. The stoves are placed over the space between double walls communicating with the outside of the building. Under the stove is a ventilator for the purpose of admitting pure air from the outside. Attached to each school-room is a large cloak-room, the door of which can be opened to give more breathing space. The door to the large hall can be opened, and the window of the cloak-room can be raised for the purpose of admitting fresh air. I give it as my opinion that there is not a more convenient or better ventilated school-building outside of a city in the State. It seems to me that any one ought to know that when air is heated it expands, becomes lighter and rises up; that carbonic acid is heavier than air and remains near the floor; that when all the air in a school-room is heated the impure air is near the floor, the pure air above. The impure air should be removed by a ventilator near the floor; that pure air should be introduced through the stove, thereby creating a continuous current of impure air out of the room, and warm, pure air into the room. When you lower the top sash of a window, that moment the impure air will stop going out, and every particle of pure air will rush out at the top of that window, leaving nothing remaining but cold carbonic acid for the children to breathe. The next moment you will hear calls for the janitor to warm up the room. My opinion is that this continual lowering of the windows and again heating of the room to be cooled by the same process, is cruel and should not be tolerated for a moment; that the teacher who persists in this kind of business, against all authority, should have his school closed until a suitable person can be found to take charge of it.

The well at the school-house here was thoroughly cleaned just before school opened last month. As my house is on the next block, south of the school-house, and lower than the school-house, I know that in a very dry time as now the water has a very unpleasant smell and taste. No impurities could be found by the usual tests. The out-house I did not build. There is no one here responsible for it.

The former School Board, who all went out last June, burnt out the proper furnaces by allowing the teachers to keep the windows lowered, and they were replaced with common stoves, a thing that ought to have been done, but as they left the school fund eleven hundred dollars behind there is no money to replace them with.

The first notice any school officer had here of Prof. A. Jones' report to you was your letter to him in the county paper, in connection with a report by a self-constituted committee, who has about as much authority over the school-house here as they have over the capitol at Washington. One of the School Board asked me to say that they would like to have a copy of Prof. Jones' report, also that they would be glad to have you come out and inspect everything. I will also suggest that if you have any instructions to give or fault to find that you communicate with the proper authorities and not with some transient person who has no interest here whatever. I was requested by the School Board to communicate with you on this subject. If I had any authority I would make an order closing these schools if instructions were not obeyed, but as I do not outrank a State officer in charge I will await developments.

Respectfully,
L. H. KENNEDY,
Health Officer of Danville.

I have thought it necessary to give the foregoing somewhat lengthy introduction, in order that all who may see this report can have a proper understanding of its scope and purpose.

Acting under authority from the Board, I visited Danville on Monday, the 25th inst., and in company with Drs. C. A. White, E. C. Farrabee and Professor A. Jones, made an inspection of the public school building and its surroundings. I found the conditions as represented in the report of Professor Jones, as given above. It is hardly necessary to say that the system of ventilation and heating is wholly inadequate, without the aid of windows and doors. The teachers, with perhaps one exception, all agree in saying that the positions of the stoves are such, that it is impossible to keep all the pupils comfortable; the ventilating flue is not sufficient to carry off the foul air, and without lowering the windows the air in the room becomes very foul. In reference to the theory that carbonic acid is heavier than air and remains near the floor, that when all the air in the school-room is heated, the impure air is near the floor, the pure air above; and that any one ought to know this, I quote the following from John S. Billings, M. D., Surgeon, U. S. A.:

Whenever a man takes the ground that carbonic acid is the special impurity to be provided for, and asserts that it is heavier than ordinary air, therefore it sinks to the floor, he demonstrates that he thinks he is a person who may be a very estimable gentleman, but whose opinions about ventilation should be received with very great distrust. Yet it is a fact that if there is one thing that the average amateur ventilator is more sure of than another, it is that carbonic acid gas is the principle evil to be guarded against. He will contend that this deadly gas is heavy, and collects near the floor, and that therefore, special arrangements should be made to remove it from that point. Now all this is nonsense, and, until a person knows enough of the physics of gases in general, and of carbonic gas in particular, to be sure that it is nonsense, it is useless to discuss ventilation problems with him. In our ocean of air the proportion of carbonic acid to the other gases is substantially the same at a point ten miles above the earth that it is on the sea level, just as the proportion of salt in the ocean is about the same at one foot below the surface that it is at one mile depth. The same is the case with an inhabited room; the proportion of carbonic acid at the floor will be about the same as, and in some cases even less than, at the ceiling, depending upon the currents in the room, and upon the fact that the principal sources by which the proportion of this gas is increased in a room, viz., respiration and lights, produce it usually in a mixture at a higher temperature than that of the room, and weighing less than the same bulk of ordinary air. For this reason it rises, and by the time it has cooled, it is thoroughly diffused through and mixed with the rest of the air of the room, and from which, as just explained, it will not separate.

Other authorities might be quoted, but the foregoing, by one whose ability will not be questioned, is deemed sufficient to prove that "all authority" is not on one side, and that a teacher, who insists on ventilating his room by means other than one small foul air flue, should not "have his school closed until a suitable person can be found to take charge of it."

The defects in heating and ventilation are sufficiently indicated by what has already been said, and repetition is deemed unnecessary. The remedy is not so easily applied. It can not be better expressed, however, than to quote the language of the Committee of the Exchange:

"It is our opinion that with the present arrangements for heating and lighting the school rooms, it will not be possible to secure that condition which good sanitary and healthful requirements demand, and that the only way to secure such an end would be to change the form of heating said rooms and heating them either by steam or warm air, which we believe could be done at a reasonable and justifiable outlay."

I am aware that this improvement can not be undertaken at this time of the year and while the schools are in session. I am fully persuaded however, that if given authority, the Superintendent and teachers will so manipulate their schools and the present means of ventilation as to produce the best possible results under the circumstances. I would suggest that the teachers have a rest (five minutes) at the end of every forty-five minutes or one hour, when the air in the rooms may be renewed by a brief opening of some of the windows and doors, while the pupils go through some light gymnastics. The additional cost of fuel is nothing when compared with the health and lives of the children and teachers.

The Committee of the Citizens' Exchange also say:

"We further found that the water used by the scholars in the school was tainted by some foreign substance so as to be perceptible to the taste, and somewhat repulsive, and that in consequence thereof a number of the children were visiting the neighboring houses for drinking water."

The character of the water can only be determined by analysis, but on account of its proximity to the privies, it is possible that it is unfit for use, or should at least be regarded with suspicion.

In conclusion, I desire to say that I am fully convinced that the trustees are ready and willing to do everything in their power to improve the sanitary condition of the schools of Danville.

I am also convinced that the intelligent citizens of the town will be satisfied with nothing less, and will give the proper authorities a hearty support in the discharge of their important duties.

Respectfully submitted,

D. N. Berg.

EIGHTH ANNUAL REPORT

OF THE

BUREAU OF VITAL AND SANITARY STATISTICS,

FOR THE

YEAR ENDING SEPT. 30, 1889.

BY C. N. METCALF, M. D., SUPERINTENDENT.

Following are presented tables of the marriages, births and deaths reported for the year ending September 30, 1889.

At the last session of the General Assembly, House Bill No. 346 was introduced by Hon D. W. Dryer, Representative from Lagrange County, but owing, perhaps, to a press of business, it failed to become a law. This bill, although in some of its features objectionable, was intended to remedy some defects in our present law governing reports of marriages, births and deaths. This Board has frequently urged upon our law makers the necessity of more stringent provisions for collecting statistics. In this particular our State is far behind others who have better laws upon the subject, and the comparison will remain unfavorable as long as the present order of things exists.

In many instances, officers are appointed to execute the law who are not in sympathy with its requirements, and the duties are performed in a perfunctory manner or are entirely neglected. Because they fail to see the value of statistics they conclude that they are worthless.

It is needless to say that such officers are wholly unfit to fill stations of such importance, and ought to be displaced by others who feel the responsibility resting upon them and are willing to perform the duties of the office.

HOUSE BILL No. 346.

A BILL for an act providing for burial permits in all cases of death, recording and reporting deaths, births and marriages, appointing county health officers, defining their duties, providing for their removal, prescribing penalties, repealing all laws in conflict therewith, and declaring an emergency.

SECTION 1. *Be it enacted by the General Assembly of the State of Indiana*, That all births, deaths and marriages, and contagious and infectious diseases, occurring within this State shall be recorded in records for that purpose, and reported as hereinafter provided. All necessary books for that purpose shall be furnished by the County Commissioners.

SEC. 2. It shall be unlawful for any undertaker, sexton, or other person, to bury any dead human body without first having procured a permit so to do. Said permit shall be issued by any health officer, town or city clerk, township trustee or justice of the peace in the township in which any death may occur.

No such permit shall be issued by any of said officers except upon a death certificate made by the physician or accoucheur in whose practice the death occurred, or by the coroner having viewed the body, and such certificate and permit shall be made, respectively, as soon after death occurs as is possible.

All reports of deaths received by the officer empowered by this act to issue a burial permit shall, on the first day of each month be forwarded, if the death occurs within a town or city having a health officer, to said health officer, who, after recording the same, shall forward the same to the county health officer, and all deaths occurring outside of municipalities having health officers shall be reported to the county health officer.

SEC. 3. It shall be the duty of all physicians or accoucheurs, upon the death of any person for the body of whom they have issued a certificate of death, to make out a report containing the following statement of facts: 1, name of deceased; 2, age; 3, sex; 4, color; 5, residence; 6, single, married, widow or widower; 7, cause of death; 8, occupation; 9, birth place; 10, date of death; 11, father's name; 12, father's birth place; 13, mother's maiden name; 14, mother's birth place; 15, name of person making return; 16, postoffice address of person making the return. In all cases where coroners are called to view a body or hold an inquest the report of the death in full, as provided in this section, shall be made by such coroner.

SEC. 4. It shall be the duty of physicians and accoucheurs to make out a report of all births occurring within their practice, containing the following statement of facts: 1, name of the child if named; 2, number of child of the mother; 3, sex; 4, color; 5, date of birth; 6, place of birth; 7, born dead or alive; 8, legitimate or illegitimate; 9, mother's maiden name; 10, mother's age; 11, mother's birth place; 12, father's name; 13, father's age; 14, father's occupation; 15, father's birthplace; 16, name of physician or accoucheur. If a child shall be born, there being no physician or accoucheur in attendance, then, or subsequently within five days of birth of such child, either parent of such child shall make, or cause to be made, a full report as provided in this act, and upon failure to so report shall be guilty of a misdemeanor, and upon conviction shall be fined five dollars and costs. Blank reports shall be furnished such persons in such cases by any health officer, and such report shall be forwarded to the same officers and at the same time as provided in section 2 of this act.

SEC. 5. It shall be the duty of all persons solemnizing marriage to make out within two days thereafter a report containing the following statement of facts: 1, name of groom; 2, place of residence; 3, age next birthday; 4, color; 5, occupation; 6, place of birth; 7, father's name; 8, mother's maiden name; 9, number of groom's marriage; 10, name of bride; 11, place of residence; 12, age next birthday; 13, color; 14, place of birth; 15, father's name; 16, mother's maiden name; 17, number of bride's marriage; 18, place of marriage; 19, by whom marriage ceremony was performed; 20, date of marriage. Said report, when so filled out, shall be returned to the clerk by whom the license was issued, who shall, on the first day of each month (except Sunday) forward the same to the county health officer.

SEC. 6. Whenever any of the following diseases, namely: small-pox, diphtheria, scarlet fever, measles or Asiatic cholera, shall exist in any place in this State, the householder in whose house any such disease shall exist shall keep exposed at the most conspicuous part of such house or surroundings a card or flag on which shall be plainly printed in large type the name of such disease, and such other matter as may be directed by the State Board of Health, and such card or flag shall not be removed except under order from or as directed through the proper health officer. Reports of all cases of the above named diseases shall be made monthly, to the proper health officer, by any physician in whose practice the disease may occur, which shall contain the following statement of facts: 1, name; 2, age; 3, sex; 4, color; 5, birthplace; 6, single, married, widow or widower; 7, number in family; 8, number affected; 8, date of return; 10, reported by ——; 11, postoffice; and if any such diseases shall occur where there is no physician in attendance upon same, then the householder in whose house the disease exists shall report the same, as promptly as possible, to a physician, who shall fill out a report of each of such cases.

SEC. 7. The sum of ten cents shall be paid any physician or accoucheur for each case by him reported to the county, city or town health officer, quarterly, from the county treasury, such reports being accompanied by a certificate from the county health officer, that the report as so presented is correct, and for the preceding quarter. Such certificate and statement of amount due each physician, accoucheur or coroner, shall be made out quarterly by the county health officer, and delivered to the proper person.

SEC. 8. The Board of County Commissioners shall, at their regular term in December in each year, appoint a health officer for their county, whose term of office shall begin on the first day of the January following; such appointee shall be a reputable and competent physician and shall hold his office for one year, unless sooner removed. Said health officer shall, before entering upon his duties, file with the County Auditor his oath of office, that he will to the best of his ability, discharge the duties of said office. He shall quarterly make to the State Board of Health reports of births, deaths and marriages and furnish such other information and perform such other duties as may be properly required of him by said Board. He shall be paid for his services fifteen cents for collecting, recording and reporting each death; fifteen cents for collecting, recording and reporting each marriage, and fifteen cents for any additional report that may be required of him by the State Board of Health. He shall also be paid fifteen cents for each mile necessarily traveled by him to inquire into or to investigate any infectious or contagious disease, or any nuisance or unhealthful locality, whenever he may be credibly informed that any of the above conditions or diseases exist, and that the health or lives of the people are endangered thereby. He shall be paid such fees as may be due him, quarterly, from the county treasury, and such other sums as the Board of County Commissioners may allow for other services performed, upon filing with the County Auditor a certificate from the State Board of Health that he has performed the duties required of him by the said Board, and his affidavit that his statement of account is correct: *Provided*, That any such county health officer failing, refusing or neglecting to perform any of the duties of his office, shall be removed by the Board of County Commissioners at any time, when requested to do so by State Board of Health or by unanimous consent of said Board, for cause, and another physician, in case of such removal, shall be appointed to fill the unexpired term.

Sec. 9. The county health officer shall have power to enforce all orders, rules and regulations made and required by the State Board of Health, and pertaining to the public health.

Sec. 10. Any person or persons failing or refusing to comply with any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined in any sum not exceeding one hundred dollars nor less than five dollars.

Sec. 11. All laws and parts of laws in conflict with any of the provisions of this act are hereby repealed.

Sec. 12. Whereas an emergency exists for the immediate taking effect of this act, it shall be in force from and after its passage.

If this bill had become a law, or one with similar provisions, some of the obstacles to the collection of statistics would have been overcome. Health officers, as well as physicians, now complain that they are not paid adequate amount for the work required to be done. However, this objection urged by county health officers loses its force when in almost all instances he agrees to do the work for the price allowed by the Commissioners. But under the provisions of the bill his compensation would be in proportion to the effort put forth, and the amount of work done.

No provision is made in our present statutes on the subject of compensation to physicians for the work required of them in reporting deaths and diseases, while the foregoing bill proposes to pay them for all such work. It is true that "the statute confers on a physician certain privileges, and may impose corresponding duties," but many fail to view it in this light, and in counties where the health officer does not exercise "eternal vigilance," many births and deaths are unreported, and the statistics thus obtained are of comparatively small value.

One other valuable feature of the bill is that which provides for the removal of officers who fail to do their duty. Under existing laws no such provisions are made and the result is apparent.

DEATHS IN CITIES.

We have tabulated deaths from certain cities, in which burial permits are required separately, in order to ascertain the death rate per thousand. These cities are located in different parts of the State, as follows:

CITIES.	POPULATION.	NO. OF DEATHS.	RATE.
Cannelton	2,100	39	18.5
Columbus	8,000	103	12.8
Evansville	50,000	735	14.7
Franklin	5,000	52	10.7
Indianapolis	100,000	1,702	17.
Laporte	10,000	96	9.6
Michigan City	12,500	181	14.4
New Albany	27,000	206	7.6
Richmond	19,000	240	12.6
South Bend	23,000	88	3.8
Tell City	2,700	30	11.1
Terre Haute	39,000	331	8.5
Valparaiso	6,000	55	9.1

It is very evident from the foregoing exhibit that there are serious errors in it. As will be seen, the death rate varies from 3.8 per thousand in South Bend, to 18.5 in Cannelton. Assuming that these estimates are correct (which we do not), the latter city must be a very unhealthy one, while the former would be a profitable health resort. Either the population is incorrectly reported (over-estimated) or the number of deaths is not fully reported, or both errors have been committed. If burial permits are required, or if cities have ordinances requiring them, are they enforced, or have the necessary steps been taken to collect these reports?

TABLE A.

Deaths by Counties for the Year Ending September 30, 1889.

COUNTIES.	1888.						1889.																		Males.	Females.	Total.
	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		April.		May.		June.		July.		Aug.		Sept.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Adams	2	2	4	..	1	4	..	1	2	2	..	1	..	2	2	1	3	4	1	2	2	2	3	3	20	24	44
Allen	33	19	20	11	23	20	32	30	18	20	27	28	24	22	19	23	1	..	28	25	30	20	23	26	278	244	522
Bartholomew	13	5	11	9	15	12	11	9	9	9	8	15	14	10	9	8	15	17	15	10	11	10	13	7	144	121	265
Benton	..	1	3	2	2	1	1	4	..	..	2	3	1	2	..	1	1	1	1	2	..	2	2	3	13	22	35
Blackford	2	3	2	..	3	2	5	2	..	..	..	..	..	1	3	2	1	..	5	5	3	2	1	3	25	20	45
Boone	6	5	5	9	3	4	9	14	4	5	8	4	10	14	6	4	5	2	4	5	5	6	3	4	68	76	144
Brown	..	..	..	..	..	..	2	1	..	..	1	..	1	1	..	1	..	2	1	5	2	..	2	..	9	10	19
Carroll	6	4	5	3	7	3	13	19	4	1	3	3	7	4	2	3	2	3	7	4	15	7	4	5	75	59	134
Cass	..	..	..	..	..	..	8	7	9	11	13	11	7	4	6	2	7	6	8	9	10	9	7	8	75	67	142
Clarke	9	13	5	4	5	9	6	8	14	6	8	4	9	8	10	7	19	6	15	11	14	11	13	5	127	92	219
Clay	2	4	3	..	2	2	9	3	1	1	2	5	6	3	1	3	1	3	5	3	3	4	5	3	40	34	74
Clinton	..	..	..	..	..	..	2	5	3	6	4	3	3	1	2	4	2	3	8	12	4	5	6	15	34	54	88
Crawford	1	..	6	2	5	4	5	3	4	1	2	7	6	6	4	1	4	2	6	4	5	4	4	1	52	35	87
Daviess	11	13	7	4	15	13	7	8	10	9	11	13	12	6	6	4	4	4	16	6	8	14	9	8	116	102	218
Dearborn	5	5	11	3	1	5	6	4	7	7	6	6	1	5	2	2	9	3	5	2	6	1	3	4	62	47	109
Decatur	8	4	4	3	2	7	4	8	4	7	6	4	5	4	5	7	4	3	5	8	.	5	3	8	50	68	118
Dekalb	3	2	1	1	2	7	1	1	1	4	2	1	1	5	3	..	1	1	1	1	3	1	..	2	19	26	45
Delaware	10	6	10	9	8	8	8	9	8	5	5	6	19	19	9	13	7	9	20	19	14	11	13	11	131	125	256
Dubois	6	15	4	2	10	3	12	12	4	4	1	3	3	6	2	1	2	5	1	7	8	2	4	1	57	61	118
Elkhart	11	6	7	6	6	7	20	15	8	8	10	11	16	18	7	11	14	11	7	10	8	10	9	6	123	119	242
Fayette	4	2	..	..	5	..	4	3	5	9	6	7	1	6	2	3	..	4	4	1	4	5	2	6	37	46	83
Floyd	13	11	8	7	7	9	9	8	14	5	4	3	21	18	10	13	13	12	13	6	11	8	12	5	135	105	240
Fountain	5	2	..	1	2	6	1	4	5	3	3	1	6	3	5	1	2	3	2	2	2	2	3	2	36	30	66
Franklin	6	5	2	3	5	3	1	1	..	3	2	2	..	3	..	1	1	4	3	1	2	3	6	2	28	31	59
Fulton	5	6	5	3	4	2	6	10	4	..	8	4	5	5	5	2	5	1	9	5	7	6	3	4	66	48	114

Gibson	16	14	5	9	8	6	4	4	5	8	4	4	7	5	5	4	1	8	8	7	10	10	8	9	81	88	169
Grant	5	4	3	4	9	3	3	3	6	5	..	3	4	3	5	3	2	5	9	1	8	4	6	2	60	40	100
Greene	1	..	..	..	4	2	5	2	3	7	3	2	..	..	1	3	1	1	6	2	3	2	2	3	29	24	53
Hamilton	11	9	8	3	..	2	8	15	6	8	9	7	6	7	4	9	5	5	7	8	7	8	6	3	77	84	161
Hancock	5	5	3	6	3	5	3	5	5	9	11	8	7	4	4	3	..	3	4	3	11	10	1	4	57	65	122
Harrison	5	3	5	7	10	7	6	3	1	11	6	2	5	9	7	5	6	7	8	8	4	6	8	4	71	72	143
Hendricks	14	11	9	5	4	5	2	7	5	7	9	9	10	19	9	4	12	6	11	8	5	8	4	8	94	97	191
Henry	6	11	10	8	13	12	12	10	6	2	10	13	13	13	9	9	6	5	9	10	9	16	8	10	111	119	230
Howard	6	4	2	3	6	5	6	2	7	4	6	7	11	7	5	3	7	2	9	7	3	7	2	6	70	57	127
Huntington	11	13	14	12	14	18	19	12	9	11	10	9	9	9	9	10	6	1	5	19	11	15	8	11	125	140	265
Jackson	20	20	8	11	5	8	10	17	5	6	10	10	8	8	7	3	6	5	12	15	3	3	13	18	107	124	231
Jasper	2	2	..	1	1	..	11	9	3	1	1	1	1	4	4	1	..	3	..	1	1	..	1	..	25	23	48
Jay	12	13	9	8	12	11	7	12	3	8	5	7	10	6	5	11	10	7	8	15	12	5	13	9	106	112	218
Jefferson	4	5	3	5	9	4	4	2	7	8	10	13	5	8	4	6	4	3	11	5	7	4	3	6	60	60	120
Jennings	6	6	1	3	2	4	8	4	9	8	8	6	6	5	2	4	5	5	6	8	2	2	2	5	71	69	140
Johnson	9	9	7	6	5	5	9	2	5	5	7	10	7	5	4	8	7	3	9	9	7	6	5	5	81	73	154
Knox	4	5	4	3	4	6	7	3	5	2	10	6	1	3	2	3	1	2	5	2	6	7	2	1	51	43	94
Kosciusko	13	18	17	3	4	3	8	4	7	12	8	5	7	3	4	9	2	2	7	5	9	14	9	7	95	85	180
Lagrange	2	8	2	2	2	5	2	3	5	3	10	3	7	8	1	6	6	1	6	2	7	6	7	3	57	50	107
Lake	7	4	14	13	4	2	3	2	2	5	3	1	5	3	1	2	4	..	2	..	..	..	1	..	46	32	78
Laporte	15	12	7	7	22	11	15	11	16	16	21	13	10	13	12	12	14	11	6	14	13	19	16	9	167	148	315
Lawrence	6	6	..	4	4	3	6	3	8	4	9	5	7	3	7	2	3	3	3	3	2	2	2	2	57	40	97
Madison	8	15	8	5	4	10	6	1	8	4	6	6	10	17	4	5	5	3	2	1	6	6	5	5	72	78	150
Marion	94	102	65	59	64	68	85	79	68	54	105	95	82	90	93	79	103	84	105	104	99	92	99	65	1,062	971	2,033
Marshall	5	5	10	5	3	6	3	6	3	2	9	8	5	4	1	1	6	3	5	3	7	6	8	7	65	56	121
Martin	5	4	1	2	3	1	11	11	1	1	2	2	3	2	2	1	3	..	1	2	2	2	5	2	39	30	69
Miami	6	8	6	7	1	4	5	5	9	9	8	6	3	4	..	4	7	7	7	4	8	4	6	1	66	63	129
Monroe	4	7	1	4	3	2	7	1	4	3	1	1	4	4	..	3	1	1	3	8	1	4	6	4	35	42	77
Montgomery	12	13	8	5	8	2	9	9	12	12	6	10	12	12	11	15	3	2	10	13	6	18	7	9	104	120	224
Morgan	10	9	1	1	3	1	5	5	6	9	3	2	8	7	1	3	3	1	6	3	4	4	1	2	51	47	98
Newton	3	2	1	1	..	..	3	6	2	5	2	2	9	6		..	..	..	6	5	1	3	..	..	27	31	58
Noble	2	3	..	1	1	..	..	..	1	..	1	..	7	2	4	3	3	5	3	2	5	3	7	5	34	24	58
Ohio	1	5	3	1	..	2	4	..	3	1	2	..	1	2	..	1	..	2	2	2	3	..	1	..	20	16	36
Orange	4	1	2	3	1	3	..	..	1	2	1	4	8	8	4	1	3	5	2	4	1	4	1	..	28	35	63
Owen	2	2	2	4	1	3	6	3	1	2	3	4	3	3	..	1	5	1	4	1	3	4	1	1	31	29	60
Parke	..	..	..	..	..	..	3	2	3	1	1	2	6	8	3	1	6	4	8	7	3	6	2	4	35	35	7
Perry	11	14	3	4	4	5	4	5	4	3	4	7	6	9	3	3	3	7	10	5	3	9	2	2	57	73	130
Pike	2	5	6	2	4	5	2	3	1	3	1	3	1	1	2	..	2	2	4	3	1	2	4	1	30	30	60
Porter	1	6	6	5	8	3	9	2	4	7	6	6	3	5	..	1	5	4	3	7	3	2	4	2	52	50	100
Posey	15	16	9	6	8	4	7	13	11	8	14	5	10	12	6	9	5	2	6	14	12	10	7	9	110	108	212

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TABLE A—Continued.

COUNTIES.	1888.						1889.																				
	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		April.		May.		June.		July.		Aug.		Sept.		Males.	Females.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Pulaski	1	3	1	3	3	4	8	1	6	3	3	3	2	..	..	4	2	..	3	5	2	2	1	1	32	29	61
Putnam	10	12	4	6	4	6	8	19	10	10	8	5	4	5	3	4	3	2	12	15	5	10	10	12	81	106	187
Randolph	13	15	6	6	13	11	14	8	10	10	14	12	8	12	9	7	7	4	13	10	15	14	12	12	134	121	255
Ripley	3	1	4	4	1	1	1	2	2	9	9	5	10	7	..	..	..	..	5	1	6	1	3	1	44	32	76
Rush	6	7	5	8	14	10	9	9	7	11	3	9	7	6	7	2	3	6	13	5	11	6	6	7	91	86	177
Scott	1	..	4	2	1	2	2	1	..	1	..	1	3	2	2	4	3	1	3	..	1	3	..	..	20	17	37
Shelby	14	19	2	4	5	4	16	16	13	5	9	3	7	14	4	6	2	5	19	16	10	6	3	3	104	101	205
Spencer	15	8	10	5	4	5	12	7	8	4	12	5	8	4	5	4	17	11	7	8	8	6	12	5	118	72	190
Starke	1	..	1	2	1	2	2	1	1	1	..	1	2	1	..	2	..	..	1	..	..	..	2	..	11	10	21
Steuben	..	..	..	..	1	1	5	..	..	1	3	4	4	9	3	4	..	1	..	2	2	2	..	..	18	24	42
St. Joseph	6	6	4	1	4	2	4	1	2	4	4	1	8	3	4	4	5	4	13	11	6	4	8	7	68	48	116
Sullivan	6	3	..	4	5	1	4	1	3	2	2	1	2	1	..	5	..	2	2	2	3	3	2	3	29	28	57
Switzerland	3	3	1	..	1	1	..	..	2	5	5	3	2	2	3	3	5	..	2	1	..	2	2	1	26	21	47
Tippecanoe	10	6	5	9	3	8	7	6	8	3	12	5	4	5	12	12	3	10	3	9	8	8	5	8	80	89	169
Tipton	6	6	6	2	9	4	5	2	4	4	1	2	2	4	1	3	4	3	3	6	5	4	5	..	51	40	91
Union	2	..	1	..	3	2	1	2	1	..	3	2	6	2	1	..	2	1	1	..	1	..	2	5	24	14	38
Vanderburgh	32	25	32	28	23	31	30	35	44	21	51	24	37	33	29	30	43	42	48	46	37	39	39	41	445	395	840
Vermillion	..	2	3	3	4	2	1	..	5	1	3	1	3	1	3	2	3	1	3	2	1	2	1	1	30	18	48
Vigo	18	20	15	11	26	13	26	26	30	18	5	2	38	38	14	10	17	12	18	18	21	30	30	23	258	221	479
Wabash	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	...	...
Warren	1	2	..	..	..	..	8	5	..	..	3	1	..	..	..	1	..	1	2	..	2	3	..	2	16	15	31
Warrick	6	7	1	1	1	1	3	2	4	2	6	5	1	4	3	2	3	5	2	8	7	11	6	4	43	52	95
Washington	11	6	10	12	9	4	18	9	..	..	..	..	..	..	..	..	..	..	5	7	9	6	1	3	63	47	110
Wayne	18	30	17	14	11	15	15	17	24	11	13	20	31	20	20	17	20	16	35	20	27	27	20	20	251	227	478
Wells	4	4	2	3	4	3	3	3	4	4	2	4	..	..	..	..	..	..	11	9	6	3	1	2	37	35	72
White	3	2	4	1	..	3	8	6	2	4	4	6	4	4	1	2	1	2	2	3	3	1	1	1	33	35	68
Whitley	6	6	1	3	4	7	2	1	4	4	2	2	..	1	3	2	2	4	3	2	8	1	3	3	38	36	74
Total	726	726	526	452	550	540	724	655	606	543	666	581	701	698	495	502	542	466	760	714	694	682	626	556	7,617	7,095	14,722

TABLE B.

CAUSES OF DEATH.

Showing Total Number of Deaths by Months, Sex and Color, for the Year Ending September 30, 1889.

CLASS ONE—ZYMOTIC DISEASES.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	White.		Colored.		Total.
													M.	F.	M.	F.	
ORDER ONE—MIASMATIC.																	
Anthrax	...	1	...	3	1	...	...	...	...	...	...	...	3	2	...	...	5
Chill, congestive	3	1	4	3	7	...	3	1	2	1	3	8	21	12	3	...	36
Cholera infantum	59	12	9	3	2	3	2	1	55	225	155	74	328	264	3	5	600
Cholera morbus	5	...	...	...	...	...	3	...	1	5	4	2	10	8	...	1	19
Croup	31	19	30	32	10	14	10	9	4	4	3	14	93	82	6	1	182
Diarrhœa	16	11	...	10	6	8	2	5	15	32	19	15	80	55	4	...	139
Diphtheria	45	44	62	36	35	26	18	20	26	9	18	36	178	184	5	8	374
Dysentery	36	7	8	6	...	1	3	5	21	44	42	29	105	96	...	1	202
Entero-colitis	16	7	4	...	...	1	...	3	7	21	27	11	42	44	3	2	91
Erysipelas	7	8	10	8	9	12	10	9	4	20	32	18	76	71	...	...	147
Fever, bilious	...	...	...	...	...	...	2	...	...	...	...	1	2	1	...	...	3
Fever, catarrhal	1	2	3	5	2	7	3	1	...	...	...	1	9	16	...	...	25
Fever, cerebro-spinal	4	4	8	12	9	10	11	12	10	9	5	7	51	49	1	...	101
Fever, congestive	4	...	...	...	...	...	2	3	1	1	1	1	7	6	...	...	13
Fever, continued	2	1	...	...	...	...	...	...	...	...	...	...	2	...	...	1	3
Fever, intermittent	1	...	1	1	2	...	1	...	2	...	1	...	2	7	...	...	9
Fever, malarial	24	8	3	11	4	8	10	7	3	21	13	18	55	66	5	4	130
Fever, pernicious	...	...	...	1	...	...	...	...	...	1	1	1	1	3	...	...	4
Fever, puerperal	7	2	5	12	5	10	12	8	6	4	2	4	...	74	...	3	77
Fever, remittent	6	...	1	...	...	4	1	...	1	5	5	8	14	16	1	...	31
Fever, rheumatic	...	...	...	...	...	...	1	1	2	...	1	...	3	2	...	...	5
Fever, scarlet	9	8	12	10	14	7	13	15	11	12	7	8	66	60	...	...	126
Fever, typhoid	174	112	85	69	39	29	31	27	11	39	91	101	419	348	20	21	808
Fever, typho-malarial	13	6	5	2	2	1	3	5	2	9	11	12	34	35	1	1	71
Gangrene	2	5	2	3	4	2	2	4	1	3	4	...	16	15	1	...	32
Measles	1	10	11	19	17	28	21	11	8	4	4	4	58	76	3	1	138
Milk sickness	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1

TABLE B—CAUSES OF DEATH—Continued.

CLASS TWO—CONSTITUTIONAL—Continued.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	White.		Colored.		Total.
													M.	F.	M.	F.	
Mumps	1	...	...	1	...	2	2	...	...	...	...	...	4	2	...	...	6
Peritonitis, puerperal	1	...	...	1	6	3	6	...	4	...	1	...	...	21	...	1	22
Pertussis	6	3	6	10	10	11	13	12	12	13	13	10	50	65	1	4	120
Pyæmia	6	13	5	19	14	15	19	9	7	16	15	11	60	83	5	3	151
Septæmia, puerperal	1	1	1	1	1	1	1	1	2	...	...	...	...	10	...	...	10
Total	483	278	276	278	199	203	205	170	218	497	480	394	1,789	1,774	61	57	3,681
ORDER TWO—ENTHETIC.																	
Syphilis, acquired	...	...	...	...	...	...	1	1	...	4	1	1	4	4	...	...	8
Syphilis, congenital	...	1	1	...	1	2	2	2	...	...	...	...	5	3	...	1	9
Total	...	1	1	..	1	2	3	3	...	4	1	1	9	7	...	1	17
ORDER THREE—DIETIC.																	
Delirium tremens	...	...	1	...	...	1	...	1	2	...	...	...	5	...	...	...	5
Eczema	1	1	...	4	...	2	...	...	...	...	...	1	5	4	...	...	9
Inanition	25	13	11	19	19	17	22	17	21	35	28	27	124	107	10	13	254
Intemperance	1	...	...	...	2	1	2	3	2	4	1	2	18	...	...	...	18
Purpura	3	...	1	2	...	1	2	...	1		1	...	4	7	...	...	11
Urticaria	...	...	...	...	...	1	...	...	...	...	1	...	..	2	...	...	2
Total	30	14	13	25	21	23	26	21	26	49	31	30	156	120	10	13	299
ORDER FOUR—PARASITIC.																	
Aphtha	1	...	...	...	1	...	...	...	1	...	...	1	2	2	...	...	4
Thrush	..	...	...	...	...	...	...	...	...	3	2	...	2	3	...	...	5
Total	1	...	...	...	1	...	...	...	1	3	2	1	4	5	...	...	9
Total zymotic diseases	514	293	290	303	222	228	234	194	245	543	514	426	1,958	1,906	71	71	4,006

TABLE B—Continued.

CLASS TWO—CONSTITUTIONAL.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	White.		Colored.		Total.
													M.	F.	M.	F.	
ORDER ONE—DIATHETIC.																	
Anæmia	4	1	...	4	5	...	7	3	1	5	3	2	8	25	...	2	35
Cancer	42	12	25	22	25	16	36	28	27	36	28	29	119	201	...	6	326
Dropsy	19	14	11	18	15	14	15	7	9	19	12	13	76	84	2	4	166
Goitre	2	1	1	...	1	1	...	...	...	1	1	1	...	9	...	...	9
Leucocythæmia	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Lymphadenoma	...	...	...	...	...	...	...	1	...	1	...	1	...	3	...	...	3
Rheumatism	4	2	8	6	6	7	12	5	2	12	7	6	41	35	1	...	77
Total	71	30	46	50	52	38	70	44	39	74	51	52	244	358	3	12	617
ORDER TWO—TUBERCULAR.																	
Abscess, psoas	1	1	...	...	...	...	1	...	...	...	1	1	4	1	...	...	5
Hydrocephalus	4	3	2	4	1	2	2	3	3	3	3	1	15	12	1	3	31
Meningitis, tubercular	8	2	5	3	9	8	3	5	8	4	1	6	26	31	4	1	62
Morbis coxarius	1	...	1	1	...	...	1	1	1	...	...	...	4	2	...	...	6
Phthisis	170	111	123	157	152	166	218	132	139	161	145	138	727	927	75	83	1,812
Scrofula	3	2	3	5	5	4	2	3	1	2	2	1	16	13	3	1	33
Tabes mesenterica	2	...	...	3	1	1	2	5	6	2	2	5	16	9	1	3	29
Total	189	119	134	173	168	181	229	149	158	172	154	152	808	995	84	91	1,978
Total constitutional diseases	260	149	180	223	220	219	299	193	197	246	205	204	1 052	1,353	87	103	2,595

TABLE B—Continued.

CLASS THREE—LOCAL DISEASES.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	White.		Colored.		Total.
													M.	F.	M.	F.	
ORDER ONE—NERVOUS SYSTEM.																	
Apoplexy	20	15	16	31	22	27	25	19	20	23	29	24	141	121	5	4	271
Brain abscess	...	...	...	2	...	1	4	1	...	1	2	2	9	3	1	...	13
Brain congestion	18	17	14	21	18	22	25	20	11	22	23	15	114	99	8	5	226
Brain disease	2	1	1	7	...	8	3	4	1	2	5	...	19	15	...	...	34
Brain effusion	...	3	2	1	...	...	...	2	1	1	...	...	5	3	...	1	9
Brain fever	8	8	8	6	7	4	8	4	2	6	4	5	39	29	...	2	70
Brain softening	5	6	5	2	5	2	11	3	6	3	8	4	40	19	1	...	60
Cerebritis	8	7	9	6	7	10	12	7	6	14	7	9	58	41	3	...	102
Chorea	...	...	...	1	...	...	...	1	1	1	1	...	1	3	...	1	5
Convulsions	14	16	18	17	17	19	21	16	15	32	17	15	109	99	7	2	217
Epilepsy	5	2	3	5	4	5	1	5	2	2	4	2	21	16	1	2	40
Insanity	...	...	1	...	...	...	1	1	...	...	1	...	4	...	...	...	4
Locomotor ataxia	...	...	...	...	...	...	1	...	2	1	...	...	3	...	1	...	4
Meningitis	19	14	21	18	21	24	43	23	18	29	27	13	136	118	9	7	270
Meningitis, cerebral	5	1	2	5	3	5	7	6	2	6	8	3	21	30	...	2	53
Meningitis, spinal	4	3	2	2	4	10	2	2	3	3	3	2	23	17	...	...	40
Myelitis	1	...	...	...	...	...	...	...	...	1	1	1	1	3	...	...	4
Nervous prostration	1	3	4	5	1	2	4	3	1	1	1	1	13	14	...	...	27
Neuralgia	1	...	...	...	1	3	1	1	...	1	2	2	4	6	2	...	12
Neurasthenia	...	1	...	...	...	...	...	...	...	2	1	1	1	3	...	1	5
Paralysis	31	19	27	30	25	25	31	26	26	34	27	19	156	159	4	1	320
Potts' disease	...	...	...	...	...	...	1	...	...	...	1	...	1	...	1	...	2
Rachitis	...	...	...	...	...	...	1	...	...	1	...	...	1	1	...	...	2
Spina bifida	3	3	...	2	...	2	1	1	...	1	1	1	7	8	...	...	15
Spine disease	3	3	3	5	3	4	3	...	3	...	1	5	16	13	3	1	33
Tetanus	3	2	3	3	...	1	3	4	5	4	5	2	23	10	...	2	35
Total	151	124	139	168	138	174	209	149	125	191	179	126	966	830	46	31	1,873

ORDER TWO—CIRCULATORY.																	
Congestion	6	2	1	1	3	1	1	...	2	4	2	5	15	13	...	...	28
Embolism	2	...	1	2	1	...	...	...	...	...	...	...	...	6	...	...	6
Heart disease	81	63	55	83	75	67	73	78	60	89	61	49	444	349	18	23	834
Hemorrhage	3	2	5	1	1	3	1	4	1	2	...	3	11	9	2	1	26
Total	92	67	62	87	80	71	75	82	63	95	63	57	473	377	20	24	894
ORDER THREE—RESPIRATORY.																	
Asthma	3	1	2	5	2	1	1	2	1	3	4	2	16	11	...	...	27
Bronchitis	18	20	12	33	42	45	41	21	13	13	10	9	120	137	10	10	277
Catarrh	1	1	1	1	4	2	...	...	...	1	...	1	6	5	...	1	12
Emphysema	...	...	...	...	1	3	1	1	2	2	...	1	9	2	...	...	11
Glottis œdema	...	1	1	...	...	1	...	...	...	...	...	...	1	1	1	...	3
Haemoptysis	3	1	...	1	1	2	...	1	3	1	...	1	12	2	...	...	14
Hydrothorax	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1
Influenza	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1
Laringitis	2	1	6	3	4	2	4	1	1	1	3	1	16	12	...	1	29
Lungs, abscess	2	1	...	...	3	1	4	4	2	2	1	...	11	7	1	1	20
Lungs, congestion	6	8	12	18	9	17	11	10	6	6	3	9	50	53	4	7	114
Lung disease	2	1	2	2	4	2	...	2	1	1	1	1	12	7	...	...	19
Lungs, œdema	...	2	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2
Pharyngitis	1	...	...	1	...	1	1	...	1	...	...	1	1	4	...	1	6
Pleuritis	2	1	1	3	1	...	2	2	...	...	1	...	5	8	1	...	14
Pneumonitis	69	70	110	171	157	168	144	59	53	31	24	16	529	489	32	22	1,072
Pneumonitis, broncho	...	...	2	2	2	...	2	1	1	...	...	1	7	4	...	...	11
Pneumonitis, catarrhal	6	...	4	5	1	...	...	...	...	...	...	...	10	6	...	...	16
Pneumonitis, pleuro	2	...	...	4	5	2	3	2	1	...	...	...	6	13	...	...	19
Pneumonitis, typho	2	2	3	4	8	8	4	3	2	2	3	5	24	22	...	...	46
Quinsy	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1
Total	119	110	156	254	244	256	218	109	87	63	50	49	838	785	49	43	1,715
ORDER FOUR—DIGESTIVE.																	
Bowels, abscess	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	1
Bowels, catarrh	...	...	...	...	...	...	...	2	...	1	6	...	3	5	1	...	9
Bowels, congestion	5	2	3	5	2	...	4	3	4	8	9	3	23	25	1	2	48
Bowels, disease	3	1	4	5	3	5	3	3	6	4	2	1	18	20	...	2	40
Bowels, hemorrhage	2	1	2	2	...	1	...	1	2	1	...	...	9	2	1	...	12
Bowels, obstruction	3	1	3	3	5	...	2	4	3	1	6	3	17	17	...	...	34
Bowels, ulceration	2	1	1	...	...	...	...	...	...	...	1	1	5	1	...	...	6
Colic	...	...	...	...	...	...	3	...	1	...	2	...	4	2	...	...	6
Colitis	...	...	...	...	...	1	...	...	3	1	1	1	4	4	...	...	7
Dyspepsia	1	...	...	...	...	...	1	2	2	2	4	1	8	5	...	...	13
Enteritis	27	10	7	14	14	25	13	16	18	40	45	21	129	108	9	4	250
Gall stones	1	2	...	...	...	...	...	...	1	...	...	...	1	3	...	...	4
Gastritis	13	6	7	5	3	10	14	14	11	7	10	10	47	58	4	1	110

TABLE B—Continued.

CLASS THREE—LOCAL DISEASES—Con.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Aprl.	May.	June	July.	Aug.	Sept.	White. M.	White. F.	Colored. M.	Colored. F.	Total.
Gastro-enteritis	2	...	3	3	1	2	3	3	...	6	6	4	16	17	...	...	33
Hepatitis	7	2	2	2	2	3	3	2	1	2	2	...	19	9	...	...	28
Hernia	2	2	4	2	1	4	2	2	2	4	...	3	13	13	2	...	28
Intussusception	1	2	...	3	1	2	...	...	...	...	1	2	7	5	...	...	12
Jaundice	1	2	2	4	2	...	5	3	...	2	4	4	17	10	2	...	29
Liver, abscess	3	2	3	...	...	...	1	1	...	...	1	1	7	3	1	1	12
Liver, atrophy	...	1	2	...	...	...	...	1	...	...	...	...	3	1	...	...	4
Liver, cirrhosis	2	5	3	2	2	3	4	3	1	2	5	3	28	7	...	...	35
Liver, congestion	2	2	1	1	1	2	3	1	...	...	...	...	6	7	...	...	13
Liver, disease	4	1	2	1	6	...	3	3	4	4	2	4	18	14	1	1	34
Liver, schlerosis	1	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2
Oesophagus, stricture	1	...	...	1	...	1	...	...	...	...	...	...	2	1	...	...	3
Peritonitis	11	11	12	13	7	11	20	7	11	15	10	17	43	92	4	6	145
Splenitis	1	...	...	1	1	...	1	1	...	1	...	...	4	2	...	...	6
Stomach, catarrh	...	2	...	1	...	...	...	...	1	...	...	...	2	2	...	...	4
Stomach, congestion	7	1	2	3	5	1	8	1	...	3	5	2	14	23	...	1	38
Stomach, disease	...	1	...	5	4	...	2	1	2	1	1	1	10	7	...	1	18
Stomach, hemorrhage	3	2	...	...	...	...	...	...	...	...	...	...	2	9	...	...	5
Stomach, ulceration	3	5	2	...	...	1	2	...	2	3	2	3	11	12	...	...	23
Stomatitis	2	...	...	1	...	1	...	...	1	2	...	...	2	5	...	...	7
Throat, disease	...	1	...	1	1	1	1	...	...	...	...	1	5	1	...	...	6
Tonsilitis	2	1	1	1	...	3	4	...	...	2	...	...	10	2	...	1	13
Typhlitis	1	1	1	...	4	...	...	...	...	4	...	1	9	5	...	...	14
Total	113	69	67	79	65	77	102	74	78	116	125	87	517	489	26	20	1,052
ORDER FIVE—URINARY.																	
Albuminurea	2	...	1	3	2	5	2	6	1	1	...	2	10	14	...	1	25
Bladder disease	...	...	...	1	...	1	...	...	...	...	...	...	2	...	...	...	2
Calculus	1	1	...	1	...	...	1	...	1	...	...	...	5	...	...	...	5
Cystitis	4	2	2	4	4	10	4	2	6	4	4	4	44	3	1	2	50
Diabetes	1	3	2	4	6	4	2	3	2	3	...	5	24	10	1	...	35
Hæmaturia	1	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	2
Kidney disease	2	...	1	3	...	3	4	2	1	2	4	1	12	11	...	...	23

Nephria	7	12	13	17	7	4	14	15	7	10	13	12	93	36	1	1	131
Nephritis	3	2	1	3	4	7	8	7	10	7	3	3	34	22	1	1	58
Prostatitis	...	...	...	1	1	...	1	...	1	...	...	1	5	...	...	...	5
Uræmia	6	4	2	8	3	5	4	4	1	6	4	6	34	19	...	...	53
Urethra, stricture of	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	1
Urine, suppression of	1	...	...	...	...	...	...	...	...	...	1	2	2	2	...	...	4
Total	28	24	22	45	27	40	41	39	30	33	29	36	268	117	4	5	394
Order Six—Generative.																	
Metritis	1	...	...	...	1	2	1	1	1	...	...	...	..	8	...	...	8
Tumor, ovarian	1	...	2	1	...	1	...	...	...	1	...	1	...	7	...	...	7
Tumor, uterus	...	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	2
Total	2	...	2	1	1	3	2	2	2	1	...	1	...	17	...	...	17
Order Seven—Locomotory.																	
Necrosis of tibia	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	1
Necrosis of jaw	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Ostitis	...	1	...	...	1	...	...	...	...	...	...	...	1	1	...	...	2
Total	1	1	...	...	1	...	...	...	...	...	1	...	3	1	...	...	4
Order Eight—Integumentary.																	
Abscess	4	3	7	2	2	6	3	3	3	2	6	6	21	22	1	3	47
Total	4	3	7	2	2	6	3	3	3	2	6	6	21	22	1	3	47
Order Nine—Miscellaneous.																	
Cellulitis	...	...	...	...	...	...	...	...	...	1	...	1	...	2	...	...	2
Otitis media	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1
Scurvy	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1
Tumor	1	4	1	1	3	1	2	1	4	4	2	...	6	17	...	1	24
Ulcer	1	...	...	...	1	1	...	1	...	...	...	...	3	1	...	...	4
Total	2	4	1	1	5	2	2	3	4	5	2	1	11	20	...	1	32
Total local diseases	512	402	456	637	563	629	652	461	392	506	455	363	3,097	2,658	146	127	6,028

TABLE B—Continued.

CLASS FOUR—DEVELOPMENTAL DISEASES.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	White.		Colored.		Total.
													M.	F.	M.	F.	
Order One—Children.																	
Atelectasis	...	1	1	1	...	...	...	...	1	2	...	...	5	1	...	...	6
Birth, injuries	3	2	1	1	1	...	...	...	1	2	...	...	9	2	...	...	11
Birth, premature	15	13	10	16	10	16	13	12	15	24	31	28	114	78	5	6	203
Cyanosis	1	3	3	7	12	7	11	3	3	7	4	2	34	27	2	...	63
Dentition	1	...	...	...	...	...	1	...	1	...	3	2	3	5	...	...	8
Hemorrhage, umbilical	...	...	1	2	...	1	1	2	...	...	...	...	3	3	1	...	7
Malformation	2	...	1	1	1	1	1	1	...	4	4	2	7	11	...	...	18
Malnutrition	2	...	1	1	1	...	2	...	...	...	...	...	2	5	...	...	7
Prolapsis funis	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1
Total	24	19	18	29	25	25	29	18	21	39	42	35	177	133	8	6	324
Order Two—Women.																	
Amenorrhœa	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	2	2
Climacteria	1	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	2
Parturition	1	...	2	3	1	2	4	1	1	4	3	4	...	26	...	...	26
Phlegmatia dolens	1	...	1	...	...	...	...	1	...	1	...	...	...	4	...	...	4
Placenta previa	...	...	...	...	...	1	1	...	2	1	1	...	...	6	...	...	6
Post partum hemorrhage	...	...	1	2	1	...	1	...	...	1	...	3	...	9	...	...	9
Puerperal eclampsia	2	...	1	1	1	2	4	2	1	...	4	4	...	22	...	...	22
Uterine hemorrhage	...	...	...	...	...	1	...	...	2	...	1	2	...	6	...	...	6
Uterus, disease	1	...	...	1	...	...	...	...	...	...	2	...	...	4	...	...	4
Uterus, rupture	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Total	6	...	6	7	3	7	11	4	6	7	12	13	...	80	...	2	82
Order Three—Old Age.																	
Old age	31	22	29	30	22	36	37	27	21	40	29	37	150	199	3	9	361
Total	31	22	29	30	22	36	37	27	21	40	29	37	150	199	3	9	36

ORDER FOUR—NUTRITION.																	
Asthenia	2	2	4	1	...	3	3	...	...	...	...	...	9	7	...	...	16
Debility	15	8	6	17	11	9	11	13	15	15	16	12	63	71	7	7	148
Exhaustion	5	8	6	6	6	11	2	3	1	10	8	9	37	34	3	1	75
Marasmus	9	2	7	7	2	4	3	1	11	7	4	14	38	31	1	1	71
Total	32	20	23	31	19	27	19	17	27	32	28	35	147	143	11	9	310
Total developmental	93	61	76	97	69	95	96	66	75	118	111	120	474	555	22	26	1,077

TABLE B —Continued.

CLASS FIVE—VIOLENCE.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	White.		Colored.		Total.
													M.	F.	M.	F.	
ORDER ONE—ACCIDENTS AND NEGLIGENCE.																	
Accident	32	22	28	23	27	7	17	11	23	24	31	19	193	55	11	5	264
Accident, railroad	15	8	14	6	7	18	4	2	6	6	8	9	91	9	3	...	103
Boiler explosion	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Burn	4	6	5	8	7	5	6	5	1	3	8	4	25	29	2	1	57
Drowning	4	...	2	5	2	5	3	6	7	6	6	3	35	10	4	...	49
Hydrophobia	...	1	...	...	1	...	...	...	1	...	...	...	3	...	...	...	3
Insolation	...	...	...	...	...	...	1	...	2	2	...	...	5	...	...	...	5
Lightning	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1
Poison	2	4	2	5	2	3	2	4	3	1	4	1	21	12	...	...	33
Shooting	2	8	2	6	1	4	6	5	8	6	5	4	43	3	6	...	52
Total	60	49	53	53	47	42	39	33	46	49	57	40	418	118	26	6	568
ORDER THREE—HOMICIDE.																	
Homicide	3	1	3	2	..	...	2	1	1	...	3	2	11	6	1	..	18
Total	3	1	3	2	...	...	2	1	1	...	3	2	11	6	1	...	18
ORDER FOUR—SUICIDE.																	
Hanging	1	1	1	1	1	2	2	1	2	1	2	...	14	1	...	...	15
Poison	2	3	1	1	2	1	1	...	4	3	2	2	10	12	...	...	22
Shooting	2	...	1	...	1	...	2	4	4	3	...	2	16	3	...	...	19
Suicide	6	4	2	7	2	2	7	7	8	5	4	8	42	19	1	..	62
Total	11	8	5	9	6	5	12	12	18	12	8	12	82	35	1	...	118
Total violence	74	58	61	64	53	47	53	46	65	61	68	54	511	159	28	6	704
UNKNOWN.	32	18	24	38	23	22	43	18	18	26	27	23	164	136	7	5	312
Total unknown	32	18	24	38	23	22	43	18	18	26	27	23	164	136	7	5	312

RECAPITULATION.																		
Zymotic diseases	514	293	290	303	222	228	234	194	245	543	514	426	1,958	1,906	71	71	4,006
Constitutional diseases	260	149	180	223	220	219	299	193	197	246	205	204	1,052	1,353	87	103	2,595
Local diseases	512	402	456	637	563	629	652	461	392	506	455	363	3,097	2,658	146	127	6,028
Developmental diseases	93	61	76	97	69	95	96	66	75	118	111	120	474	655	22	26	1,077
Violence, accidents and negligence	74	58	61	64	53	47	53	46	65	61	68	54	511	159	28	6	704
Unknown	32	18	24	38	23	22	43	18	18	26	27	23	164	136	7	5	312
Grand total	1,485	981	1,087	1,362	1,150	1,240	1,377	978	992	1,500	1,380	1,190	7,256	6,767	361	338	14,722

TABLE C.

CAUSES OF DEATH.

Nationality and Social Relations for the Year Ending September 30, 1889.

CLASS ONE—ZYMOTIC DISEASES.	NATIONALITY.						SOCIAL RELATIONS.								Total.
	American.		Foreign.		Not Reported.		Single.		Married.		Widowers.	Widows.	Not Reported.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			M.	F.	
ORDER ONE—MIASMATIC.															
Anthrax	2	1	1	1	....	....	1	....	2	1	1	1	....	....	5
Chill, congestive	19	9	5	2	....	1	15	3	7	9	2	....	....	....	36
Cholera infantum	330	264	....	2	1	3	331	269	....	....	....	....	....	....	600
Cholera morbus	8	6	2	2	....	1	3	1	5	7	1	1	1	....	19
Croup	94	79	3	2	2	2	99	83	....	....	....	....	....	....	182
Diarrhœa	77	43	5	12	2	....	53	33	24	8	7	13	..	1	139
Diphtheria	163	180	19	10	....	2	181	189	1	3	....	....	....	....	374
Dysentery	89	89	15	6	1	2	69	62	20	14	13	20	3	1	202
Entro colitis	45	44	....	1	....	....	44	39	1	5	....	1	....	....	91
Erysipelas	67	64	8	5	1	2	39	31	26	22	5	14	6	4	147
Fever, bilious	1	1	1	....	....	....	1	1	1	....	....	....	....	....	3
Fever, catarrhal	9	14	....	1	....	1	8	11	1	4	....	1	....	....	25
Fever, cerebro-spinal	51	48	1	....	....	1	47	44	4	5	....	....	1	....	101
Fever, congestive	7	5	....	....	....	1	6	5	1	1	....	....	....	....	13
Fever, continued	2	1	....	....	....	....	2	....	....	1	....	....	....	....	3
Fever, intermittent	2	6	....	1	....	....	1	2	1	4	....	1	....	....	9
Fever, malarial	52	64	5	6	3	....	27	37	25	21	6	12	2	....	130
Fever, pernicious	....	3	1	....	....	....	....	1	1	1	....	....	....	1	4
Fever, puerperal	....	68	....	5	....	4	....	4	....	68	....	1	....	1	77
Fever, remittent	14	14	....	1	1	1	10	8	5	5	....	3	....	....	31
Fever, rheumatic	3	2	....	....	....	....	1	....	1	1	1	1	....	....	5
Fever, scarlet	66	58	....	1	....	1	65	59	1	1	....	....	....	....	126
Fever, typhoid	389	342	31	18	19	9	244	186	173	139	17	39	5	5	808

Fever, typho-malarial	34	34	2	....	....	2	20	17	13	12	2	7	....	....	71
Gangrene	12	12	3	3	2	....	2	1	11	5	4	8	....	1	32
Measles	61	75	....	2	....	....	49	56	9	18	....	2	3	1	138
Milk sickness	....	1	....	....	....	....	....	....	....	1	....	....	....	....	1
Mumps	4	2	....	....	....	....	4	2	....	....	....	....	....	....	6
Peritonitis, puerperal	....	21	....	....	....	1	....	....	....	21	....	1	....	....	22
Pertussis	49	68	2	....	....	1	50	69	1	....	....	....	....	....	120
Pyæmia	53	79	7	4	5	3	32	25	27	46	6	13	....	2	151
Septæmia, puerperal	....	10	....	....	....	....	....	....	....	9	....	1	....	....	10
Total	1,703	1,707	111	85	37	38	1,404	1,241	361	432	65	140	21	17	3,681
ORDER TWO—ENTHETIC.															
Syphilis, acquired	4	4	....	....	....	....	3	1	....	3	....	....	1	....	8
Syphilis, congenital	6	4	....	....	....	....	5	4	....	....	....	....	....	....	9
Total	9	8	....	....	....	....	8	5	....	3	....	....	1	....	17
ORDER THREE—DIETIC.															
Delirium tremens	4	....	....	....	1	....	2	....	2	....	1	....	....	....	5
Eczema	5	4	....	....	....	....	4	4	1	....	....	....	....	....	9
Inanition	131	115	2	5	1	....	127	110	6	6	1	4	....	....	254
Intemperance	14	....	2	....	2	....	4	....	10	....	3	....	1	....	18
Purpura	4	6	....	1	....	....	4	5	....	....	....	1	....	1	11
Urticaria	....	2	....	....	....	....	....	2	....	....	....	....	....	....	2
Total	158	127	4	6	4	....	141	121	19	6	5	5	1	1	299
ORDER FOUR—PARASITIC.															
Aphtha	2	2	....	....	....	....	2	2	....	....	....	....	....	....	4
Thrush	2	3	....	....	....	....	2	3	....	....	....	....	....	....	5
Total	4	5	....	....	....	....	4	5	....	....	....	....	....	....	9
Total zymotic diseases	1,874	1,847	115	91	41	38	1,557	1,372	380	441	70	145	23	18	4,006

TABLE C—Continued.

CLASS TWO—CONSTITUTIONAL.	NATIONALITY.						SOCIAL RELATIONS.								Total.
	American.		Foreign.		Not Reported.		Single.		Married.		Widowers.	Widows.	Not Reported.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			M.	F.	
ORDER ONE—DIATHETIC.															
Anæmia	7	25	....	1	1	1	6	8	1	10	1	8	....	1	35
Cancer	83	161	31	40	5	6	7	22	97	122	13	56	2	7	326
Dropsy	51	70	22	14	5	4	21	20	41	36	11	26	5	6	166
Goitre	....	9	....	....	....	....	....	2	....	4	....	3	....	....	9
Leucocythæmia	....	....	....	1	....	....	....	....	....	1	....	....	....	....	1
Lymphadenoma	....	2	....	1	....	....	....	2	....	1	....	....	....	....	3
Rheumatism	36	30	4	3	2	2	15	8	20	12	6	14	1	1	77
Total	177	297	57	60	13	13	49	62	159	186	31	107	8	15	617
ORDER TWO—TUBERCULAR.															
Abscess, psoas	4	1	....	....	....	....	3	....	1	1	....	....	....	....	5
Hydrocephalus	16	15	....	....	....	....	16	15	....	....	....	....	....	....	31
Meningitis, tubercular	29	30	....	2	1	....	29	27	1	4	....	1	....	....	62
Morbus coxarius	4	2	....	....	....	....	2	2	1	....	1	....	....	....	6
Phthisis	684	908	89	61	29	41	352	391	357	464	60	130	33	25	1,812
Scrofula	18	14	1	....	....	....	15	13	3	1	....	1	....	....	33
Tabes mesenterica	16	11	1	1	....	....	11	5	6	4	....	2	....	1	29
Total	771	981	91	64	30	41	428	453	369	474	61	134	33	26	1,978
Total constitutional diseases	948	1,278	148	124	43	54	477	515	528	660	92	241	41	41	2,595

TABLE C—Continued.

CLASS THREE—LOCAL DISEASES.	NATIONALITY.						SOCIAL RELATIONS.								Total.
	American.		Foreign.		Not Reported.		Single.		Married.		Widowers.	Widows.	Not Reported.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			M.	F.	
ORDER ONE—NERVOUS SYSTEM.															
Apoplexy	112	94	26	27	8	4	32	15	74	57	35	49	5	4	271
Brain, abscess	7	3	1	....	2	....	7	2	3	1	....	....	....	....	13
Brain, congestion	114	95	7	9	1	....	98	67	20	30	....	....	7	4	226
Brain, disease	17	15	2	....	....	....	9	11	9	3	....	1	1	....	34
Brain, effusion	4	4	1	....	....	....	4	2	....	2	1	....	....	....	9
Brain, fever	37	29	2	2	....	....	37	27	2	3	....	1	....	....	70
Brain, softening	31	17	9	1	1	1	6	6	29	9	6	4	....	....	60
Cerebritis	52	36	6	4	3	1	44	30	13	5	1	2	3	4	102
Chorea	1	4	....	....	....	....	....	3	1	1	....	....	....	....	5
Convulsions	110	95	5	3	1	3	113	95	1	5	....	....	2	1	217
Epilepsy	19	16	1	1	2	1	16	9	3	6	2	3	1	....	40
Insanity	3	....	1	....	....	....	....	....	4	....	....	....	....	....	4
Locomotor ataxia	4	....	....	....	....	....	2	....	1	....	1	....	....	....	4
Meningitis	130	123	11	2	4	....	125	105	11	17	7	....	2	3	270
Meningitis, cerebral	18	32	3	....	....	....	17	25	4	6	....	1	....	....	53
Meningitis, spinal	20	14	....	1	3	2	21	13	1	3	1	1	....	....	40
Myelitis	1	3	....	....	....	....	1	2	....	....	....	1	....	....	4
Nervous prostration	9	12	2	2	2	....	4	3	7	9	2	2	....	....	27
Neuralgia	6	4	....	2	....	....	1	....	3	4	1	2	1	....	12
Neurasthenia	1	4	....	....	....	....	....	1	1	3	....	....	....	....	5
Paralysis	122	134	32	15	6	11	20	18	101	54	30	76	9	12	320
Potts' disease	2	....	....	....	....	....	2	....	....	....	....	....	....	....	2
Rachitis	1	1	....	....	....	....	1	1	....	....	....	....	....	....	2
Spina bifida	7	8	....	....	....	....	7	8	....	....	....	....	....	....	15
Spine disease	16	14	2	....	1	....	13	7	4	5	1	2	1	....	33
Tetanus	22	11	1	1	....	....	17	9	6	3	....	....	....	....	35
Total	866	768	112	70	34	23	597	459	298	226	88	145	32	28	1,873

TABLE C—Continued.

CLASS THREE--LOCAL DISEASES.	Nationality.						Social Relations.								
	American.		Foreign.		Not Reported.		Single.		Married.		Widowers.	Widows.	Not Reported.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			M.	F.	
Order Two—Circulatory.															
Congestion	14	12	1	1	....	....	10	9	5	2	....	2	....	....	28
Embolism	....	4	....	2	....	....	....	....	....	5	....	1	....	....	6
Heart disease	359	289	75	61	28	22	119	83	254	168	71	110	18	11	834
Hemorrhage	12	9	3	1	1	....	9	3	7	6	....	1	....	....	26
Total	385	314	79	65	29	22	138	95	266	181	71	114	18	11	894
Order Three—Respiratory.															
Asthma	9	7	6	3	1	1	3	2	9	5	4	4	....	....	27
Bronchitis	108	127	19	15	3	5	89	97	36	20	4	28	1	2	277
Catarrh	5	6	....	....	1	....	5	2	1	1	....	3	....	....	12
Emphysema	7	2	1	....	1	....	4	1	3	1	1	....	1	....	11
Glottis oedema	2	1	....	....	....	....	2	1	....	....	....	....	....	....	3
Haemoptysis	10	1	2	1	....	....	7	....	5	....	....	1	....	1	14
Hydrothorax	....	1	....	....	....	....	....	1	....	....	....	....	....	....	1
Influenza	1	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Laryngitis	13	13	3	....	....	....	11	9	5	4	....	....	....	....	29
Lungs, abscess	11	7	1	1	....	....	3	2	8	6	....	....	1	....	20
Lungs, congestion	44	54	8	5	2	1	37	39	12	13	5	6	....	2	114
Lung disease	9	5	2	2	1	....	3	4	8	1	1	2	....	....	19
Lungs, oedema	....	1	1	....	....	....	....	....	1	1	....	....	....	....	2
Pharyngitis	1	4	....	....	....	1	1	5	....	....	....	....	....	....	6
Pleuritis	5	7	1	1	....	....	5	....	1	4	....	3	....	1	14
Pneumonitis	495	455	42	39	24	17	292	354	204	153	48	91	17	13	1,072
Pneumonitis, broncho	7	4	....	....	....	....	6	4	1	....	....	....	....	....	11
Pneumonitis, catarrhal	10	5	....	1	....	....	9	1	1	4	....	1	....	....	16
Pneumonitis, pleuro	6	13	....	....	....	....	1	4	4	5	1	4	....	....	19
Pneumonitis, typho.	18	16	4	5	2	1	11	7	10	8	3	7	....	....	46
Quinsy	1	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Total	762	729	90	73	35	26	491	433	309	226	67	150	20	19	1,715

ORDER FOUR—DIGESTIVE.															
Bowels, abscess		1								1					1
Bowels, catarrh	4	5					3	5	1						9
Bowels, congestion	21	23	3	1			14	17	7	6	1		2	1	48
Bowels, disease	16	19	1	3	1		7	10	7	7	3	5	1		40
Bowels, hemorrhage	9	2	1				7	1	3	1					12
Bowels obstruction	14	12	2	4	1	1	8	7	4	5	3	4	2	1	34
Bowels, ulceration	5	1					1		2			2	1		6
Colic	4	1				1	2		2	2					6
Colitis	4	3					2	3	1		1				7
Dyspepsia	7	5	1				5	3	3	2					13
Enteritis	118	105	13	4	7	3	91	76	35	29	6	3	6	4	250
Gall stones		3			1				1	1		2			4
Gastritis	38	49	11	4	2	6	13	15	25	27	12	14	1	3	110
Gastro enteritis	15	13		3	1	1	10	9	5	7		1	1		33
Hepatitis	14	7	4	2	1		7	1	9	4	2	4	1		28
Hernia	14	10	1	2		1	7	2	8	6		5			28
Intussusception	7	5					4	1	2	2	1	2			12
Jaundice	18	9	1	1			10	4	6	4	2	1	1	1	29
Liver, abscess	7	4	1				4		2	3	2			1	12
Liver, atrophy	2	1	1						3	1					4
Liver, cirrhosis	20	5	8	1		1	3	1	18	4	6	2	1		35
Liver, congestion	6	7					2	3	4	3				1	13
Liver, disease	15	14	3	1	1		3	3	14	8	2	3		1	34
Liver, schlerosis	1	1						1	1						2
Œsophagus, stricture	2						1		1			1			3
Peri onitis	41	92	5	4	1	2	29	25	13	62	4	7	1	4	145
Splenitis	4	1		1			2		1	2	1				6
Stomach, catarrh	1	2	1				1			1	1			1	4
Stomach, congestion	13	21		3	1		10	6	3	12	1	5		1	38
Stomach, disease	5	8	3		2		2	3	7	2		3	1		18
Stomach, hemorrhage	2	3						2		1	2				5
Stomach, ulceration	7	10	4	2			1	6	9	5	1	1			23
Stomatitis	2	5					1	4	1	1					7
Throat disease	5	1					2	1	3						6
Tonsilitis	10	3					6	1	3	2	1				13
Typhlitis	9	3				2	6	3	2	2	1				14
Total	460	454	64	37	19	18	264	213	206	213	53	65	19	19	1,052

TABLE C—Continued.

CLASS THREE—LOCAL DISEASES.	NATIONALITY.						SOCIAL RELATIONS.								Total.
	American.		Foreign.		Not Reported.		Single.		Married.		Widowers.	Widows.	Not Reported.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			M.	F.	
ORDER FIVE—URINARY.															
Albuminurea	9	14	....	....	1	1	2	5	7	9	....	....	1	1	25
Bladder disease	2	....	....	....	....	....	....	....	2	....	....	....	....	....	2
Calculus	3	....	2	....	....	....	1	....	4	....	....	....	....	....	5
Cystitis	36	4	5	1	4	....	4	2	25	1	14	1	2	1	50
Diabetes	21	8	3	1	1	1	9	3	9	7	5	....	2	....	35
Haematuria	1	....	1	....	....	....	....	....	2	....	....	....	....	....	2
Kidney disease	10	9	1	....	1	2	1	2	10	9	1	....	....	....	23
Nephria	75	33	14	4	5	....	19	9	58	19	13	9	4	....	131
Nephritis	28	21	6	1	1	1	13	11	12	8	9	3	1	1	58
Prostatitis	5	....	....	....	....	....	....	....	4	....	1	....	....	....	5
Uraemia	25	15	6	3	3	1	10	4	19	8	5	7	....	....	53
Urethra, stricture of	1	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Urine, suppression of	2	2	....	....	....	....	1	2	....	....	1	....	....	....	4
Total	218	106	38	10	16	6	60	38	153	61	49	20	10	3	394
ORDER SIX—GENERATIVE.															
Metritis	....	6	....	2	....	....	....	....	....	8	....	....	....	....	8
Tumor, ovarian	....	6	....	1	....	....	....	3	....	3	....	1	....	....	7
Tumor, uterus	....	2	....	....	....	....	....	....	....	1	....	1	....	....	2
Total	....	14	....	3	....	....	....	3	....	12	....	2	....	....	17
ORDER SEVEN—LOCOMOTORY.															
Necrosis of tibia	1	....	....	....	....	....	....	....	....	....	1	....	....	....	1
Necrosis of jaw	1	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Ostitis	1	1	....	....	....	....	....	1	1	....	....	....	....	....	2
Total	3	1	....	....	....	....	1	1	1	....	1	....	....	....	4

ORDER EIGHT—INTEGUMENTARY.															
Abscess	18	24	4	....	....	1	7	15	11	8	4	1	....	1	47
Total	18	24	4	....	....	1	7	15	11	8	4	1	....	1	47
ORDER NINE—MISCELLANEOUS.															
Cellulitis	....	1	....	1	....	....	....	....	....	2	....	...	....	....	2
Otistis media	1	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Scurvy	1	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Tumor	5	13	1	4	....	1	...	3	3	13	2	2	1	....	24
Ulcer	2	1	1	....	....	....	1	....	2	1	....	....	....	....	4
Total	9	15	2	5	....	1	2	3	6	16	2	2	1	....	32
Total local diseases	2,721	2,425	389	263	133	97	1,560	1,260	1,250	943	335	499	99	82	6,028

TABLE C—Continued.

CLASS FOUR—DEVELOPMENTAL DISEASES.	Nationality.						Social Relations.								Total.
	American.		Foreign.		Not Reported.		Single.		Married.		Widowers.	Widows.	Not Reported.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			M.	F.	
Order One—Children.															
Atelectasis	5	1					5	1							6
Birth, injuries	9	2					9	2							11
Birth, premature	119	84					119	84							203
Cyanosis	36	27					36	27							63
Dentition	3	5					3	5							8
Hemorrhage, umbilical	4	3					4	3							7
Malformation	7	11					7	11							18
Malnutrition	1	5			1		1	3	2			1			7
Prolapus, funis		1						1							1
Total	184	139			1		184	137	2			1			324
Order Two—Women.															
Amenorrhœa		2						2							2
Climacteria		2								1		1			2
Parturition		25		1				3		21		1		1	26
Phlegmatia dolens		4								4					4
Placenta previa		4		1		1				6					6
Post partum hemorrhage		9								9					9
Puerperal, eclampsia		21				1		3		18		1			22
Uterine hemorrhage		6								6					6
Uterus disease		4						2		2					4
Uterus rupture		1								1					1
Total		78		2		2		10		68		3		1	82

ORDER THREE—OLD AGE.															
Old age	98	139	48	66	7	3	10	9	68	37	69	152	6	10	361
Total	98	139	48	66	7	3	10	9	68	37	69	152	6	10	361
ORDER FOUR—NUTRITION.															
Asthenia	7	6	2	1	....	....	2	2	4	4	3	1	....	....	16
Debility	51	63	15	10	4	5	30	22	18	23	17	30	5	3	148
Exhaustion	35	28	3	3	2	4	19	15	9	6	4	9	8	5	75
Marasmus	39	27	....	5	....	....	37	25	1	4	1	3	....	....	71
Total	132	124	20	19	6	9	88	64	32	37	25	43	13	8	310
Total developmental	414	480	68	87	14	14	288	220	102	148	94	199	19	19	1,077

TABLE C—Continued.

CLASS FIVE—VIOLENCE.	Nationality.						Social Relations.								Total.
	American.		Foreign.		Not Reported.		Single.		Married.		Widowers.	Widows.	Not Reported.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			M.	F.	
Order One— **Accidents and Negligence.**															
Accident	171	54	25	6	8	....	104	24	73	20	12	12	15	4	264
Accident, railroad	66	6	13	2	15	1	46	1	34	2	1	6	13	....	103
Boiler explosion	1	....	....	....	....	....	1	....	....	....	....	....	....	....	1
Burn	24	27	3	2	....	1	23	23	3	5	....	2	1	....	57
Drowning	31	5	4	2	4	3	26	5	7	2	2	2	4	1	49
Hydrophobia	3	....	....	....	....	....	3	....	....	....	....	....	....	....	3
Insolation	4	....	1	....	....	....	1	....	4	....	....	....	....	....	5
Lightning	1	....	....	....	....	....	....	....	1	....	....	....	....	....	1
Poison	14	12	6	....	1	....	11	3	8	6	1	2	1	1	33
Shooting	44	2	2	....	3	1	28	1	19	2	1	....	1	....	52
Total	359	106	54	12	31	6	243	57	149	37	17	24	35	6	568
Order Three—Homicide.															
Homicide	9	6	1	....	2	....	3	2	9	2	....	2	....	....	18
Total	9	6	1	....	2	....	3	2	9	2	....	2	....	....	18
Order Four—Suicide.															
Hanging	8	....	4	....	2	1	2	....	12	1	....	....	....	....	15
Poison	5	9	5	2	....	1	1	2	9	9	....	1	....	....	22
Shooting	13	3	1	....	2	....	5	....	9	3	2	....	....	....	19
Suicide	31	16	9	2	3	1	11	9	28	6	2	3	2	1	62
Total	57	28	19	4	7	3	19	11	58	19	4	4	2	1	118
Total violence	425	140	74	16	40	9	265	70	216	58	21	30	37	7	704

Unknown	150	122	13	9	8	10	107	91	37	23	9	12	18	15	312
Total unknown	150	122	13	9	8	10	107	91	37	23	9	12	18	15	312
RECAPITULATION.															
Zymotic diseases	1,874	1,847	115	91	41	38	1,557	1,372	380	441	70	145	23	18	4,006
Constitutional diseases	948	1,278	148	124	43	54	477	515	528	660	92	241	41	41	2,595
Local diseases	2,721	2,425	389	263	133	97	1,560	1,260	1,250	943	335	499	99	82	6,028
Developmental diseases	414	480	68	87	14	14	282	220	102	142	94	199	19	19	1,077
Violence, accidents and negligence	425	140	74	16	40	9	265	70	216	58	21	30	37	7	704
Unknown	150	122	13	9	8	10	107	91	37	23	9	11	18	15	312
Grand total	6,532	6,292	807	590	279	222	4,248	3,528	2,513	2,267	621	1,126	237	182	14,722

TAB

Causes of Death, and Grouped Ages for

CLASS ONE - ZYMOTIC DISEASES.	Under 1		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.
Order One—Miasmatic.														
Anthrax	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .
Chill, congestive	3	. .	2	1	1	1	1	. .	4		6	4	1	2
Cholera infantum	231	184	97	78	3	6	. .	. .	. .	. .	. .	. .	. .	. .
Cholera morbus		. .	1	. .	. .	. .	. .	. .	1	2	2	2	1	. .
Croup	15	16	63	45	19	19	1	2	. .	1	1	. .	. .	. .
Diarrhœa	25	15	11	12	3	5	1	. .	2	. .	2	1	. .	. .
Diphtheria	10	15	83	69	61	79	15	22	8	1	1	2	1	2
Dysentery	15	14	34	31	6	5	7	4	1	7	2	1	4	2
Entro-colitis	21	16	20	19	.	1	. .	1	1	1	1	2	1	. .
Erysipelas	10	17	13	8	2	2	2	2	. .	2	4	6	1	. .
Fever, bilious	1	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .
Fever, catarrhal	3	9	2	2	1	. .	. .	. .	. .	. .	. .	. .	1	. .
Fever, cerebro-spinal	13	14	15	12	10	6	2	7	5	3	2	6	6	1
Fever, congestive	2	. .	1	. .	2	1	1	. .	. .	2	. .	2	.	. .
Fever, continued	. .	. .	. .	.	. .	. .	. .	. .	1	. .	. .	1	. .	. .
Fever, intermittent	. .	1	. .	. .	1	. .	. .	. .	. .	1	.	2	1	2
Fever, malarial	10	7	7	9	3	7	2	4	2	7	6	5	4	9
Fever, pernicious	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	1	. .	. .
Fever, puerperal	. .	. .	. .	. .	. .	. .	. .	1	. .	4	.	41	. .	26
Fever, remittent	2	1	1	4	3	1	. .	. .	. .	2	4	4	1	. .
Fever, rheumatic	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	1	. .	. .
Fever, scarlet	9	4	40	34	14	11	. .	6	. .	2	2	2	. .	1
Fever, typhoid	5	5	27	13	28	18	16	33	66	62	118	93	68	58
Fever, typho-malarial	2	. .	4	1	2	5	2	3	6	6	4	4	4	2
Gangrene	1	. .	1	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	2
Measles	10	10	29	24	6	12	3	5	3	4	4	9	1	4
Milk-sickness	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Mumps	1	. .	1	1	. .	1	. .	. .	1	. .	. .	. .	. .	. .
Peritonitis, puerperal	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	.	10	. .	9
Pertussis	31	35	15	27	2	3	. .	2	1	1	. .	. .	. .	. .
Pyæmia	5	6	5	2	4	3	1	2	2	6	8	25	5	16
Septæmia, puerperal	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	. .	2
Total	425	371	472	393	172	188	55	94	104	117	167	229	96	143
Order Two—Enthetic.														
Syphilis, acquired	. .	. .	. .	. .	. .	. .	. .	.	. .	. .	1	1	2	1
Syphilis, congenital	4	2	1	2	. .	. .	. .	. .	. .	.	. .	. .	. .	. .
Total	4	2	1	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Order Three—Dietic.														
Delirium tremens	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1	. .
Eczema	4	4	. .	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .
Inanition	113	79	9	10	3	3	1	. .	. .	1	. .	1	2	1
Intemperance	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	7	. .
Purpura	2	. .	2	2	. .	. .	. .	. .	. .	2	. .	. .	. .	. .
Urticaria	. .	. .	. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .
Total	119	101	11	13	3	4	1	. .	. .	3	3	1	10	1
Order Four—Parasitic.														
Aphtha	2	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Thrush	2	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Total	4	5	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Total zymotic diseases	552	479	484	408	175	192	56	94	104	120	171	231	108	145

LE D.

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the Year Ending September 30, 1889.

40 to 50.		50 to 60.		60 to 70		70 to 80		80 to 90.		90 to 100.		Over 100		Not Reptd.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
. .	. .	1	. .	1	1	. .	1	. .	.	. .	. .	. .	. .	. .	. .	3	2	5
2	2	. .	. .	2	. .	1	. .	1	1	. .	. .	. .	. .	. .	1	24	12	36
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	331	269	600
1	2	2	. .	1	2	1	1	. .	. .	. .	. .	. .	. .	. .	. .	10	9	19
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	99	83	182
8	2	10	4	5	8	8	4	5	3	1	1	. .	. .	3	. .	84	55	139
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	2	182	192	374
6	5	4	4	11	14	7	6	3	2	. .	. .	. .	. .	5	2	105	97	202
. .	2	. .	1	1	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	45	46	91
9	4	8	5	9	9	6	7	5	1	. .	. .	. .	. .	7	3	76	71	147
1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	1	3
. .	. .	. .	1	1	2	. .	1	. .	. .	. .	. .	. .	. .	1	1	9	16	25
. .	. .	1	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	52	49	101
. .	1	. .	. .	. .	. .	1	. .	. .	.	. .	. .	. .	. .	. .	. .	7	6	13
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.	2	1	3
. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	7	9
7	5	3	5	2	3	5	5	6	1	. .	. .	. .	. .	3	3	60	70	130
1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	3	4
. .	3	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . . .	77	77
. .	. .	. .	. .	2	1	2	. .	. .	2	. .	. .	. .	. .	. .	1	15	16	31
. .	. .	. .	. .	2	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	8	2	5
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	66	60	126
40	22	18	18	20	20	10	11	3	1	. .	. .	. .	. .	20	15	439	369	808
1	4	3	2	2	5	3	1	1	2	. .	. .	. .	. .	1	1	35	36	71
2	1	2	2	5	2	3	4	2	2	1	1	. .	. .	. .	. .	17	15	32
2	4	1	1	. .	1	. .	1	. .	. .	. .	. .	. .	. .	2	2	61	77	138
. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. . 1	1
1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	2	6
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	22	22
. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	1	51	69	120
11	11	7	2	11	8	5	2	1	2	. .	. .	. .	. .	. .	1	65	86	151
. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	10	10
92	70	62	47	75	81	52	44	27	17	2	2	. .	. .	49	35	1,850	1,831	3,681
. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	4	4	8
. .	. .	. .	. .	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	5	4	9
. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	9	8	17
1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.	. .	2	. .	5	. . . .	5
. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.	5	4	9
. .	1	2	1	1	2	2	2	. .	1	1	.	. .	. .	. .	. .	134	120	254
3	. .	3	. .	2	.	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	18	. . . .	18
. .	1	. .	. .	. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	4	7	11
. .	. .	. .	. .	. .	. .	.	.	.	. .	. .	. .	. .	. .	. .	. .	. . . .	2	2
4	2	5	1	4	3	2	3	. .	1	1	. .	. .	. .	3	. .	166	133	299
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	2	4
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	3	5
. .	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	5	9
96	73	67	49	79	84	54	47	27	18	3	2	. .	. .	53	35	2,029	1,977	4,006

TABLE D—

CLASS TWO—CONSTITUTIONAL.	Under 1		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
ORDER ONE—DIATHETIC.														
Anæmia	2	1	2	1	. .	1	. .	. .	. .	2	. .	4	. .	2
Cancer	. .	1	. .	2	. .	1	. .	. .	. .	1	4	10	6	27
Dropsy	3	1	4	4	2	5	2	2	2	3	3	7	6	5
Goitre	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	. .	. .	. .
Leucocythæmia	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Lymphadenoma	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .
Rheumatism	1	. .	2	. .	1	2	2	1	4	. .	1	7	5	4
Total	6	3	8	7	3	9	4	3	6	8	8	29	17	38
ORDER TWO—TUBERCULAR.														
Abscess, psoas.	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	2	. .	. .	1
Hydrocephalus	12	6	4	5	. .	2	. .	. .	. .	. .	. .	. .	. .	. .
Meningitis, tubercular	10	6	12	10	2	8	3	. .	. .	. .	1	4	. .	. .
Morbus coxarius	. .	. .	.	.	2	1	. .	. .	. .	. .	. .	. .	1	. .
Phthisis	15	19	15	25	10	13	12	19	62	96	219	330	165	192
Scrofula	2	4	4	2	2	1	2	1	2	1	3	2	1	. .
Tabes mesenterica	1	. .	6	2	1	. .	1	. .	1	2	1	2	2	. .
Total	40	35	41	44	17	25	18	20	66	99	226	338	169	193
Total constitutional	46	38	49	51	20	34	22	23	72	107	234	367	186	231

Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100.		Not Rep'td.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
. .	8	1	3	2	3	1	1	. .	1	. .	. .	. .	. .	. .	. .	8	27	35
14	39	31	42	30	35	21	33	6	6	. .	. .	. .	. .	7	10	119	207	326
4	6	11	10	11	14	19	18	6	8	1	. .	. .	. .	4	5	78	88	166
. .	2	. .	.	. .	4	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. . . . .	9	9
. .	1	. .	. .	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . . . .	1	1
. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . .	3	3
4	2	3	5	7	6	9	6	3	2	. .	.	. .	. .	. .	. .	42	35	77
22	58	46	61	50	62	50	59	15	17	1	. .	. .	. .	11	16	247	370	617
1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	1	5
. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	16	15	31
1	1	. .	3	. .	. .	. .	. .	. .	. .	.	. .	. .	. .	1	. .	30	32	62
. .	. .	. .	1	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	4	2	6
93	105	90	67	59	57	23	17	3	10	1	. .	. .	. .	35	60	802	1,010	1,812
2	1	1	. .	. .	1	. .	1	. .	. .	. .	.	. .	. .	. .	. .	19	14	33
. .	1	3	4	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	17	12	29
97	108	94	77	60	58	23	18	4	10	1	. .	. .	. .	36	61	892	1,086	1,978
119	166	140	138	110	120	73	77	19	27	2	. .	. .	. .	47	77	1,139	1,456	2,595

TABLE D—

CLASS THREE—LOCAL DISEASES.	Under 1		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
ORDER ONE—NERVOUS SYSTEM.														
Apoplexy	3	1	1	1	. .	1	3	. .	1	1	4	3	11	10
Brain, abscess	2	1	1	1	1	. .	. .	. .	. .	. .	2	. .	2	. .
Brain, congestion	37	33	31	19	6	7	6	2	7	4	6	10	7	9
Brain, disease	3	2	1	3	. .	2	. .	2	1	. .	3	2	2	1
Brain, effusion	2	1	1	1	1	. .	. .	. .	. .	. .	. .	. .	. .	1
Brain fever	17	6	10	16	3	. .	3	3	3	1	1	2	2	. .
Brain, softening	1	1	. .	1	1	. .	. .	. .	1	1	3	. .	2	1
Cerebritis	15	11	21	10	3	4	2	. .	1	2	1	3	1	3
Chorea	. .	. .	. .	. .	. .	. .	. .	1	. .	3	. .	. .	. .	. .
Convulsions	83	62	23	17	2	4	2	4	. .	3	1	7	. .	1
Epilepsy	1	. .	1	1	1	2	1	. .	2	1	5	2	4	5
Insanity	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Locomotor ataxia	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Meningitis	44	37	46	38	13	13	6	5	3	7	8	7	9	2
Meningitis, cerebral	4	7	7	9	2	5	2	3	. .	1	2	2	. .	2
Meningitis, spinal	10	5	5	5	3	1	. .	. .	2	1	. .	3	2	1
Myelitis	. .	. .	1	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	1
Nervous prostration	. .	1	1	. .	. .	1	. .	. .	. .	. .	3	1	. .	1
Neuralgia	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	1
Neurasthenia	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Paralysis	1	1	2	3	1	2	. .	1	1	1	3	2	8	9
Potts' disease	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	1	. .	. .	. .
Rachitis	. .	. .	1	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .
Spina bifida	6	8	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Spine disease	6	3	4	3	. .	. .	1	1	1	. .	. .	2	2	2
Tetanus	9	3	1	2	5	1	. .	1	2	1	3	1	1	. .
Total	244	183	159	130	42	43	28	24	25	28	46	47	55	51
ORDER TWO—CIRCULATORY.														
Congestion	4	3	2	2	1	1	1	1	1	2	. .	1	. .	. .
Embolism	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1
Heart disease	30	14	5	7	7	4	5	16	14	9	25	32	25	38
Hemorrhage	3	4	. .	. .	. .	. .	. .	. .	3	. .	1	1	4	3
Total	37	19	7	9	8	5	6	17	18	11	26	35	29	42
ORDER THREE—RESPIRATORY.														
Asthma	1	. .	1	1	. .	. .	. .	1	. .	. .	1	. .	. .	. .
Bronchitis	46	44	16	21	3	1	1	2	1	6	6	5	3	4
Catarrh	2	. .	1	1	1	1	. .	. .	. .	. .	1	. .	. .	. .
Emphysema	. .	. .	1	1	. .	. .	. .	. .	. .	. .	2	. .	2	. .
Glottis oedema	2	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Haemoptysis	. .	. .	1	. .	. .	. .	. .	. .	1	. .	2	. .	2	. .
Hydrothorax	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .
Influenza	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Laryngitis	6	5	3	3	. .	3	. .	. .	. .	. .	. .	3	1	. .
Lungs, abscess	1	. .	. .	2	. .	. .	. .	. .	1	. .	1	. .	1	2
Lungs, congestion	20	22	5	9	5	1	1	3	3	3	2	4	4	1
Lung disease	1	. .	. .	3	1	. .	. .	1	. .	. .	. .	. .	2	. .
Lungs, oedema	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Pharyngitis	. .	. .	1	1	. .	2	. .	. .	. .	. .	. .	. .	. .	1
Pleuritis	1	. .	2	. .	. .	. .	. .	. .	1	. .	2	. .	. .	4
Pneumonitis	119	88	75	83	29	18	11	28	11	23	39	31	48	33
Pneumonitis, broncho	3	3	3	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Pneumonitis, catarrhal	3	. .	2	1	3	. .	. .	. .	. .	. .	1	. .	. .	. .
Pneumonitis, pleuro	. .	. .	2	3	. .	. .	. .	. .	. .	1	. .	1	1	2
Pneumonitis, typho	1	. .	2	. .	1	. .	1	2	3	2	3	3	2	3
Quinsy	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .
Total	206	163	115	131	43	25	15	37	21	35	60	47	66	50

Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100		Not Rep'td.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M,	F.	M,	F.	M.	F.	M.	F.	M.	F.			
8	15	29	28	30	30	36	21	15	10	1	1	. .	. .	4	3	146	125	271
2	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	10	3	13
5	8	5	5	8	4	3	1	. .	. .	. .	. .	. .	. .	1	2	122	104	226
2	2	. .	. .	5	1	. .	. .	1	. .	. .	. .	. .	. .	1	. .	19	15	34
. .	. .	. .	. .	. .	1	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	4	9
. .	2	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	39	31	70
5	2	2	2	10	6	10	2	2	1	1	. .	. .	. .	3	2	41	19	60
7	2	3	2	2	. .	2	. .	. .	. .	. .	. .	. .	. .	3	4	61	41	102
. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	4	5
2	. .	. .	1	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	3	1	116	101	217
4	3	1	2	. .	1	2	. .	. .	. .	. .	. .	. .	. .	. .	1	22	18	40
. .	. .	1	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	4	. . . .	4
. .	. .	1	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	. . . .	4
4	5	2	4	2	4	. .	. .	. .	. .	. .	. .	. .	. .	8	3	145	125	270
2	. .	. .	2	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	21	32	53
. .	. .	. .	1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	23	17	40
. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	1	3	4
2	2	1	2	2	2	3	3	1	1	. .	. .	. .	. .	. .	. .	13	14	27
1	. .	. .	. .	2	3	. .	1	. .	1	. .	. .	. .	. .	. .	. .	6	6	12
. .	1	. .	2	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	4	5
12	7	16	19	43	44	39	45	24	17	1	2	. .	. .	9	7	160	160	320
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. . . .	2
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	1	2
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	7	8	15
1	1	. .	1	4	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	19	14	33
. .	1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	2	23	12	35
57	52	62	71	114	97	99	76	43	30	3	3	. .	. .	35	26	1,012	861	1,873
3	1	2	1	. .	1	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	15	13	28
. .	3	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. . .	6	6
47	42	66	54	110	70	82	65	32	16	. .	2	. .	. .	14	3	462	372	834
1	1	2	1	1	1	. .	. .	. .	. .	. .	. .	1	. .	.	1	16	10	26
51	47	70	56	111	72	83	66	32	16	. .	2	1	. .	14	4	493	401	894
. .	1	1	1	3	2	4	5	4	. .	. .	. .	. .	. .	1	. .	16	11	27
2	3	5	6	7	11	17	18	3	8	. .	. .	. .	. .	20	18	130	147	277
. .	1	1	. .	. .	. .	. .	2	. .	1	. .	. .	. .	. .	. .	. .	6	6	12
. .	1	2	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	9	2	11
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	1	3
2	. .	2	. .	. .	2	1	. .	. .	. .	. .	. .	. .	. .	1	. .	12	2	14
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	1	1
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . . .	1
1	. .	3	. .	. .	. .	1	1	. .	. .	. .	. .	. .	. .	1	. .	16	13	29
3	1	3	. .	1	1	1	1	. .	1	. .	. .	. .	. .	. .	. .	12	8	20
2	2	2	4	7	5	3	6	. .	. .	. .	. .	. .	. .	. .	. .	54	60	114
3	1	2	. .	3	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	12	7	19
. .	. .	. .	. .	1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	1	1	2
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	5	6
. .	1	. .	. .	. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	1	6	8	14
32	35	40	40	67	40	49	50	16	23	2	2	. .	. .	23	16	561	511	1,072
. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	7	4	11
. .	1	1	1	. .	. .	. .	2	. .	1	. .	. .	. .	. .	. .	. .	10	6	16
1	1	2	. .	. .	2	. .	2	. .	1	1	. .	. .	. .	. .	. .	6	13	19
2	1	2	. .	4	3	3	4	. .	2	. .	. .	. .	. .	. .	2	24	22	46
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . . .	1
48	49	66	52	93	69	82	94	23	37	3	2	. .	. .	46	37	887	828	1,715

TABLE D—

CLASS THREE—LOCAL DISEASES.	Under 1		1 to 4.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
ORDER FOUR—DIGESTIVE.														
Bowels, abscess	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Bowels, catarrh	2	3	1	1	. .	. .	. .	. .	. .	. .	. .	1	1	. .
Bowels, congestion	5	9	3	4	1	1	1	1	1	1	1	. .	3	2
Bowels, disease	3	3	3	1	. .	1	. .	2	1	2	1	3	. .	2
Bowels, hemorrhage	4	. .	. .	. .	. .	. .	. .	. .	1	. .	2	1	1	1
Bowels, obstruction	1	1	1	2	1	. .	1	1	4	1	. .	1	2	2
Bowels, ulceration	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	. .
Colic	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	2	. .
Colitis	1	. .	1	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Dyspepsia	4	2	. .	1	. .	. .	. .	. .	1	. .	. .	. .	. .	1
Enteritis	41	37	33	24	9	10	2	1	5	3	4	10	8	8
Gall stones	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Gastritis	2	3	4	6	2	1	1	. .	1	2	2	10	4	8
Gastro-enteritis	6	5	2	3	1	. .	. .	1	. .	1	2	1	1	3
Hepatitis	. .	. .	2	. .	. .	. .	1	. .	. .	. .	1	. .	. .	2
Hernia	4	1	. .	1	. .	. .	. .	. .	1	. .	. .	1	. .	. .
Intussusception	1	. .	. .	. .	2	. .	. .	. .	. .	. .	1	. .	. .	1
Jaundice	9	3	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Liver, abscess	. .	. .	. .	. .	1	. .	. .	. .	1	. .	1	1	. .	. .
Liver, atrophy	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Liver, cirrhosis	. .	. .	1	. .	. .	. .	. .	. .	. .	1	. .	. .	2	. .
Liver, congestion	. .	2	2	. .	. .	. .	. .	. .	. .	1	. .	2	. .	. .
Liver, disease	1	1	1	. .	. .	. .	. .	1	. .	1	1	2	4	2
Liver, schlerosis	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .
Œsophagus stricture	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Peritonitis	3	3	4	4	6	4	4	2	3	12	7	31	5	19
Splenitis	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	1	1	1	. .
Stomach, catarrh	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Stomach, congestion	2	3	2	. .	2	. .	. .	1	1	. .	2	2	1	5
Stomach, disease	. .	1	2	. .	. .	1	. .	. .	. .	. .	. .	1	. .	1
Stomach, hemorrhage	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Stomach, ulceration	. .	. .	. .	1	. .	. .	. .	. .	1	3	. .	1	2	2
Stomatitis	. .	2	1	1	. .	. .	. .	. .	. .	. .	. .	1	. .	1
Throat disease	. .	. .	. .	1	1	. .	. .	. .	. .	. .	1	. .	. .	. .
Tonsilitis	1	1	4	. .	1	. .	. .	. .	. .	. .	2	. .	1	. .
Typhlitis	. .	1	. .	. .	1	. .	. .	. .	1	. .	4	1	2	. .
Total	92	81	71	55	28	19	10	10	22	28	33	72	43	53
ORDER FIVE—URINARY.														
Albuminuria	. .	1	. .	1	. .	. .	. .	. .	. .	2	1	4	1	1
Bladder, disease	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Calculus	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	1	. .
Cystitis	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	2	3	. .
Diabetes	. .	. .	. .	. .	1	1	2	. .	2	1	1	. .	2	3
Haematuria	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Kidney disease	. .	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	1	3	3
Nephria	1	. .	3	1	2	1	1	2	2	. .	5	6	5	2
Nephritis	3	. .	3	3	1	2	1	. .	1	1	2	6	3	2
Prostatitis	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Uraemia	. .	1	3	1	1	. .	. .	. .	. .	1	2	1	1	3
Urethra, stricture of	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .
Urine, suppression of	1	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Total	5	4	9	6	5	5	4	2	6	5	12	20	20	14
ORDER SIX—GENERATIVE.														
Metritis	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	. .	2
Tumor, ovarian	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	. .
Tumor, uterus	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2
Total	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	. .	4

Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100		Over 100		Not Rep'ed.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	1	1
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	5	9
1	2	3	1	2	1	2	. .	1	. .	. .	. .	. .	. .	. .	2	24	24	48
1	1	3	. .	3	2	2	3	. .	. .	. .	. .	. .	. .	1	2	18	22	40
. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	10	2	12
. .	. .	1	5	2	1	2	. .	. .	1	1	. .	. .	. .	1	2	17	17	34
1	1	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	1	6
1	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	2	6
. .	. .	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	3	7
1	. .	. .	1	. .	. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	8	5	13
4	6	7	7	10	6	9	1	. .	. .	2	1	. .	. .	4	3	138	112	250
. .	1	. .	. .	. .	1	. .	. .	. .	1	. .	. .	. .	. .	1	. .	1	3	4
4	6	7	8	7	9	12	6	4	3	. .	. .	. .	. .	1	2	51	59	110
1	1	. .	1	1	1	1	. .	. .	. .	. .	. .	. .	. .	1	. .	16	17	33
2	. .	1	2	2	3	6	2	1	. .	. .	. .	. .	. .	8	. .	19	9	28
3	. .	3	4	1	4	2	1	1	. .	. .	. .	. .	. .	. .	1	15	13	28
1	1	1	1	. .	. .	1	1	. .	. .	. .	. .	. .	. .	. .	1	7	5	12
3	1	2	2	3	1	1	2	. .	. .	. .	. .	. .	. .	. .	. .	19	10	29
1	. .	2	. .	2	2	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	8	4	12
1	. .	. .	. .	. .	1	. .	. .	1	. .	. .	. .	. .	. .	1	. .	3	1	4
3	2	7	2	7	1	4	1	2	. .	. .	. .	. .	. .	2	. .	28	7	35
. .	. .	2	. .	2	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	6	7	13
3	1	1	2	2	3	3	1	. .		1	. .	. .	. .	2	1	19	15	34
. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	1	2
. .	. .	. .	. .	1	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	1	3
3	7	4	6	1	4	4	1	2	. .	. .	. .	. .	. .	1	5	47	98	145
. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	2	6
. .	1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	2	4
. .	5	3	2	. .	4	1	1	. .	. .	. .	. .	. .	. .	. .	1	14	24	38
2	. .	2	2	2	1	1	. .	. .	1	. .	. .	. .	. .	1	. .	10	8	18
. .	. .	1	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	3	5
1	1	1	2	4	. .	2	1	. .	1	. .	. .	. .	. .	. .	. .	11	12	23
. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	5	7
. .	. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	5	1	6
1	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	10	3	13
. .	2	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	9	5	14
38	42	55	49	55	49	57	23	14	7	4	1	. .	. .	21	20	543	509	1,052
1	1	1	3	3	2	2	. .	. .	. .	. .	. .	. .	. .	1	. .	10	15	25
. .	. .	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. . . .	2
. .	. .	. .	. .	1	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	. . . .	5
2	. .	3	1	12	2	14	. .	7	. .	. .	. .	. .	. .	3	. .	45	5	50
4	2	5	1	4	1	3	. .	1	. .	. .	. .	. .	. .	. .	1	25	10	35
. .	. .	. .	. .	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. . . .	2
1	1	1	4	4	1	1	. .	1	. .	. .	. .	. .	. .	1	. .	12	11	23
9	4	12	5	22	9	23	6	6	. .	. .	. .	. .	. .	3	1	94	37	131
1	3	6	. .	6	3	6	3	1	. .	1	. .	. .	. .	. .	. .	35	23	58
. .	. .	. .	. .	1	. .	. .	. .	3	. .	1	. .	. .	. .	. .	. .	5	. . . .	5
4	1	5	. .	8	4	5	4	4	. .	1	. .	. .	. .	. .	3	34	19	53
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . . .	1
. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	2	2	4
22	12	33	14	62	22	59	13	24	. .	3	. .	.	. .	8	5	272	122	394
. .	1	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	8	8
. .	1	. .	1	. .	2	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	7	7
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	2	2
. .	2	.	3	. .	2	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	17	17

TABLE D—

CLASS THREE—LOCAL DISEASES.	Under 1		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
ORDER SEVEN—LOCOMOTORY.														
Necrosis of tibia	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Necrosis of jaw	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .
Ostitis	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	1	. .
Total	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	2	.
ORDER EIGHT—INTEGUMENTARY.														
Abscess	1	4	4	4	. .	3	1	2	. .	. .	2	1	1	2
Total	1	4	4	4	. .	3	1	2	. .	. .	2	1	1	2
ORDER NINE—MISCELLANEOUS.														
Cellulitis	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Otitis media	. .	. .	. .	. .	1	. .	. .	. .	.	. .	. .	. .	. .	. .
Scurvy	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .
Tumor	. .	1	. .	.	. .	. .	. .	. .	. .	. .	1	3	. .	3
Ulcer	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	.
Total	. .	1	. .	. .	2	. .	. .	. .	. .	. .	1	3	1	4
Total local diseases	585	455	365	335	128	101	64	92	92	107	180	230	217	220

Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100		Over 100		Not Rep'ed.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	1	. . . .	1
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . . .	1
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	1	2
. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	3	1	4
4	3	2	. .	4	4	2	1	1	1	. .	. .	. .	. .	. .	. .	22	25	47
4	3	2	. .	4	4	2	1	1	1	. .	. .	. .	.	. .	. .	22	25	47
. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	. . 2	2
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . 1	. . . .	1
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . 1	. . . .	1
. .	2	. .	3	2	. .	2	4	. .	. .	. .	. .	. .	. .	1	2	6	18	24
1	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	3	1	4
1	2	. .	3	2	2	2	4	. .	.	. .	. .	. .	. .	2	2	11	21	32
221	209	288	248	441	317	384	278	138	91	13	8	1	. .	126	94	3,243	2,785	6,028

TABLE D—

CLASS FOUR—DEVELOPMENTAL DISEASES.	Under 1		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Order One—Children.														
Atelectasis	5	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Birth, injuries	9	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Birth premature	119	84	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Cyanosis	36	26	.	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Dentition	3	5	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Hemorrhage, umbilical	4	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Malformation	7	11	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .
Malnutrition	. .	2	1	1	.	. .	. .	. .	. .	. .	. .	. .	. .	1
Prolapus funis	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Total	183	135	1	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Order Two—Women.														
Amenorrhœa	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1	. .	. .
Climacteria	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Parturition	. .	. .	. .	. .	. .	. .	. .	3	. .	12	. .	7	. .	4
Phlegmatia dolens	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	3
Placenta previa	. .	. .	. .	. .	. .	. .	. .	. .	. .	.	. .	1	. .	4
Post partum hemorrhage	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	7
Puerperal eclampsia	. .	. .	. .	. .	. .	. .	. .	. .	. .	6	. .	9	. .	6
Uterine hemorrhage	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	5
Uterus disease	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	. .	1
Uterus rupture	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	.	. .	. .
Total	. .	. .	. .	. .	. .	. .	. .	3	. .	.	. .	24	. .	30
Order Three—Old Age.														
Old age	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Total	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Order Four—Nutrition.														
Asthenia	2	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	1	. .	1
Debility	22	17	1	2	. .	. .	. .	. .	. .	. .	. .	1	1	4
Exhaustion	20	7	1	2	. .	. .	2	. .	1	2	2	1	. .	4
Marasmus	32	15	2	4	. .	1	1	4	1	. .	1	1	. .	. .
Total	76	39	4	8	. .	1	3	4	2	2	3	4	1	9
Total developmental	259	174	5	10	. .	1	3	7	2	22	3	28	1	40

Continued.

40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100		Not Rep'td.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	1	6
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	9	2	11
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	119	84	203
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	36	27	63
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	5	8
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	3	7
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	7	11	18
. .	. .	. .	. .	1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	2	5	7
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	1	1
. .	. .	. .	. .	1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	185	139	324
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	2	2
. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	2	2
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	26	26
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	4	4
. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	6	6
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	9	9
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . . .	22	22
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	6	6
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . .	4	4
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. . . .	1	1
. .	3	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. . . .	82	82
. .	. .	. .	1	9	19	50	60	75	105	10	19	1	2	8	2	153	208	361
. .	. .	. .	1	9	19	50	60	75	105	10	19	1	2	8	2	153	208	361
. .	. .	. .	1	2	2	2	1	3	1	. .	. .	. .	. .	. .	. .	9	7	16
2	3	2	3	12	9	15	21	8	14	4	1	. .	1	3	2	70	78	148
2	3	. .	4	1	5	7	3	3	. .	. .	. .	. .	. .	1	4	40	35	75
. .	. .	. .	. .	1	4	. .	3	1	. .	. .	. .	. .	. .	. .	. .	39	32	71
4	6	2	8	16	20	24	28	15	15	4	1	. .	1	4	6	158	152	310
4	9	2	9	26	39	74	89	90	120	14	20	1	3	12	10	496	581	1,077

TABLE D—

CLASS FIVE—VIOLENCE.	Under 1		1 to 5.		5 to 10.		10 to 15.		15 to 20.		20 to 30.		30 to 40.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Order One—Accidents and Negligence.														
Accident	15	10	13	3	3	2	10	1	16	1	38	5	34	5
Accident, railroad	. .	. .	4	1	1	. .	4	. .	11	. .	23	1	12	1
Boiler explosion	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .
Burn	3	4	11	10	2	3	1	2	1	. .	1	3	1	1
Drowning	. .	. .	1	4	4	. .	7	. .	8	. .	3	1	4	2
Hydrophobia	. .	. .	1	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .
Insolation	. .	. .	. .	. .	. .	. .	.	. .	. .	. .	1	. .	. .	. .
Lightning	. .	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	1	1	. .
Poison	2	1	1	.	2	. .	. .	. .	. .	4	1	2	8	1
Shooting	. .	.	. .	. .	1	. .	2	. .	6	2	19	. .	6	
Total	20	15	31	18	15	5	24	3	42	7	87	12	66	10
Order Three—Homicide.														
Homicide	. .	1	. .	. .	. .	. .	. .	. .	. .	1	3	3	7	. .
Total	. .	1	. .	. .	. .	. .	. .	. .	. .	1	3	3	7	. .
Order Four—Suicide.														
Hanging	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	2	. .	3	1
Poison	. .	. .	. .	. .	. .	. .	. .	. .	1	1	1	4	1	3
Shooting	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	5	2	3	. .
Suicide	. .	. .	. .	. .	. .	. .	. .	. .	1	5	8	7	6	2
Total	. .	. .	. .	. .	. .	. .	. .	. .	4	6	16	13	13	6
Total violence	20	16	31	18	15	5	24	3	46	14	106	28	86	16
Unknown	65	54	8	9	5	4	2	2	5	5	14	9	4	8
Total unknown	65	54	8	9	5	4	2	2	5	5	14	9	4	8
Recapitulation.														
Zymotic diseases	552	479	484	408	175	192	56	94	104	120	171	231	108	145
Constitutional diseases	45	38	49	51	20	34	22	20	72	107	234	367	186	231
Local diseases	585	455	365	335	128	101	64	92	92	107	180	230	217	220
Developmental diseases	259	174	5	10	. .	1	3	7	2	22	3	28	1	40
Violence, accidents and negligence	20	16	31	18	15	5	24	3	46	14	106	28	86	16
Unknown	65	54	8	9	5	4	2	2	5	5	14	9	4	8
Grand total	1527	1216	942	831	343	337	171	221	321	375	708	893	602	660

Continued.

40 to 50.		50 to 60		60 to 70.		70 to 80.		80 to 90.		90 to 100.		Over 100		Not Rep'td.		Males.	Females.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
20	7	23	4	11	4	5	8	4	4	. .	. .	. .	. .	12	6	204	60	264
8	2	8	2	11	1	. .	1	1	. .	. .	. .	. .	. .	11	. .	94	9	103
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1
3	1	1	1	. .	1	1	. .	. .	1	. .	. .	. .	. .	2	3	27	30	57
4	1	2	1	1	1	1	. .	. .	. .	. .	. .	. .	. .	4	. .	39	10	49
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	. .	3
1	. .	. .	. .	2	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	. .	5
. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1
3	. .	1	. .	1	1	. .	. .	. .	. .	. .	. .	. .	. .	2	3	21	12	33
6	. .	2	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	1	49	3	52
45	11	37	8	28	8	8	9	5	5	. .	. .	. .	. .	36	13	444	124	568
1	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	.	12	6	18
1	. .	.	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	12	6	18
1	. .	1	. .	4	. .	1	. .	. .	. .	. .	. .	. .	. .	1	. .	14	1	15
1	. .	3	1	2	2	1	1	. .	. .	. .	. .	. .	. .	1	. .	10	12	22
1	1	1	. .	4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	16	3	19
10	2	7	. .	7	3	3	. .	1	. .	. .	. .	. .	. .	. .	. .	43	19	62
13	3	12	1	17	5	5	1	1	. .	. .	. .	. .	. .	2	. .	83	35	118
59	14	49	10	45	13	13	10	6	5	. .	. .	. .	.	39	13	539	165	704
6	4	14	9	15	6	3	6	2	4	. .	2	. .	. .	28	19	171	141	312
6	4	14	9	15	6	3	6	2	4	. .	2	. .	. .	28	19	171	141	312
96	73	67	49	79	84	54	47	27	18	3	2	. .	. .	53	35	2,029	1,977	4,006
119	166	140	138	110	120	73	77	47	27	2	. .	. .	.	47	77	1,139	1,456	2,595
221	209	288	248	441	317	184	278	138	91	13	8	1	. .	126	94	3,243	2,785	6,028
4	9	2	9	26	39	74	89	90	120	14	20	1	3	12	10	496	581	1,077
59	14	49	10	45	13	13	10	6	5	. .	. .	. .	. .	39	13	539	165	704
6	4	14	9	15	6	3	6	2	4	. .	2	. .	.	28	19	171	141	312
505	475	560	463	716	579	601	507	382	265	32	32	2	3	305	248	7,617	7,105	14,722

MARRIAGES.

The whole number of marriages returned for the year ending September 30, 1889, was 18,840; 801 more than was reported for the previous year; 18,508 of the contracting parties were white and 332 colored; 16,239 grooms and 16,493 brides were Americans; 1,293 grooms and 999 brides were foreign born.

The nationality of 1,308 grooms and 1,343 brides was not reported.

There were 283 grooms and 4,490 brides under twenty years; 82 grooms, and 12 brides were between seventy and eighty, and four grooms were over eighty years.

TABLE A.

Marriages by Months, Color and Nationality, for the Year Ending September 30, 1889.

COUNTIES.	Total.	1888.			1889.									Color.		American.		Foreign.		Not Reported.	
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Wh.	Bl.	Gr.	Br.	Gr.	Br.	Gr.	Br.
Adams	165	13	3	13	19	20	17	14	18	14	5	11	18	165	...	140	147	24	14	1	4
Allen	391	65	67	32	43	37	29	21	...	...	28	38	31	391	...	326	339	60	41	5	11
Bartholomew	217	26	21	31	12	19	14	14	24	14	12	15	15	217	...	202	208	13	3	2	6
Benton	83	14	9	5	13	6	8	8	3	5	4	4	4	83	...	72	72	10	8	1	3
Blackford	78	5	6	7	6	3	9	8	7	4	4	6	13	78	...	78	78	...	...	...	...
Boone	217	29	24	20	19	15	14	36	12	19	5	4	20	216	1	212	212	3	3	2	2
Brown	79	10	6	4	10	5	6	7	11	1	3	6	10	79	...	39	39	...	...	40	40
Carroll	188	42	12	19	10	12	25	14	9	8	11	10	16	188	...	157	155	28	27	3	6
Cass	280	25	26	37	20	23	25	22	20	20	15	19	28	280	...	185	188	44	31	51	61
Clark	393	31	53	35	20	33	25	29	23	25	31	13	75	361	32	315	315	...	...	78	78
Clay	234	14	16	2	31	25	29	27	24	16	15	20	15	229	5	186	190	47	43	1	1
Clinton	165	...	...	...	18	17	18	15	15	...	31	30	21	165	...	82	82	...	...	83	83
Crawford	109	13	11	14	9	8	4	11	7	12	6	10	4	109	...	108	109	1	...	...	...
Daviess	220	28	13	20	20	20	20	14	15	9	20	21	20	217	3	215	215	5	5	...	...
Dearborn	241	28	21	20	20	20	19	16	18	24	18	15	22	241	...	113	113	...	...	128	128
Decatur	142	9	21	8	9	18	10	11	9	16	5	15	11	140	2	135	138	4	1	3	3
Dekalb	197	9	15	24	19	12	21	14	13	22	15	15	18	192	5	187	192	8	4	2	1
Delaware	315	47	31	22	42	12	17	37	21	14	24	38	10	313	2	312	314	3	1	...	...
Dubois	162	14	14	14	10	15	5	18	21	10	10	17	14	162	...	162	161	...	1	...	...
Elkhart	361	38	43	29	37	31	25	30	25	17	26	27	32	361	...	309	305	31	33	21	23
Fayette	93	15	10	5	7	8	3	6	12	2	7	5	13	91	2	89	91	4	2	...	...
Floyd	210	31	18	6	23	19	7	10	15	7	44	14	16	200	10	189	203	20	6	1	1
Fountain	234	17	30	23	17	17	28	12	15	15	19	18	23	234	...	226	227	6	5	2	2
Franklin	138	10	21	10	14	6	10	9	10	12	11	10	15	138	...	115	121	15	9	8	8
Fulton	172	15	14	17	18	11	6	15	16	22	9	14	15	172	...	155	156	3	3	14	13

TABLE A—Continued.

COUNTIES.	Total.	1888.			1889.									Color.		American.		Foreign.		Not Reported.	
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Wh.	Bl.	Gr.	Br.	Gr.	Br.	Gr.	Br.
Gibson	232	29	27	18	21	23	8	13	17	7	29	19	21	225	7	226	227	6	4	. .	1
Grant	320	35	36	32	28	24	33	29	28	18	15	21	21	312	8	319	319	1	1	. . .	. . .
Greene	95	6	7	9	7	10	2	9	. .	. .	10	13	22	90	5	92	95	3	. . .	. . .	. .
Hamilton	219	18	19	7	39	18	17	22	9	11	7	27	25	216	3	215	216	2	1	2	2
Hancock	137	14	15	9	17	15	10	15	6	2	8	10	16	137	. . .	133	134	. . .	. . .	4	3
Harrison	183	24	11	25	21	17	12	10	11	5	15	8	24	182	1	176	183	7	. . .	. .	. . .
Hendricks	165	20	15	19	18	13	5	16	5	2	22	11	19	164	1	165	165	. . .	. . .	. . .	. . .
Henry	232	22	29	30	25	21	22	10	13	9	8	15	28	229	3	215	220	5	1	12	11
Howard	174	9	10	24	16	13	13	14	11	20	7	17	20	173	1	172	174	2	. . .	. .	. . .
Huntington	236	16	18	14	20	34	20	28	18	15	11	21	21	236	. . .	232	233	2	1	2	2
Jackson	227	21	21	14	35	22	14	37	12	9	13	19	10	226	1	222	223	5	4	. . .	. . .
Jasper	104	12	12	6	8	10	7	11	8	6	5	5	14	104	. . .	82	80	12	10	10	14
Jay	215	17	22	32	17	22	16	19	20	8	20	9	13	214	1	212	214	2	. . .	1	1
Jefferson	312	44	31	35	23	20	20	26	17	29	28	14	25	312	. .	. . .	. . .	. . .	. .	312	322
Jennings	133	14	14	12	13	10	12	13	4	12	7	11	11	128	5	128	126	5	7	. . .	. . .
Johnson	189	15	16	32	8	19	13	12	15	17	8	12	22	189	. . .	103	103	86	86	. . .	. . .
Knox	266	33	25	41	22	17	17	20	14	14	23	17	23	251	15	. .	. .	. . .	. .	266	266
Kosciusko	325	22	42	44	35	18	31	22	21	31	15	19	25	325	. . .	310	315	7	3	8	7
Lagrange	139	20	14	15	8	13	18	12	7	3	9	11	9	139	. . .	132	128	7	9	. . .	2
Lake	168	19	19	11	11	16	22	12	16	16	6	8	12	168	. . .	71	84	92	77	5	7
Laporte	254	38	31	24	34	16	17	15	11	13	16	18	21	252	2	149	151	104	102	1	1
Lawrence	174	26	15	7	4	9	14	18	11	13	14	16	27	174	. . .	170	174	3	. .	1	. .
Madison	288	47	30	25	27	16	30	20	17	29	17	15	15	286	2	281	286	4	. . .	3	2
Marion	1,038	108	120	100	102	60	59	79	105	94	55	70	86	975	63	892	916	139	111	7	11
Marshall	239	36	34	23	20	13	26	14	17	14	12	17	13	239	. . .	233	234	5	4	1	1
Martin	104	12	8	7	12	7	7	6	3	3	15	7	17	104	. . .	95	98	7	6	2	. . .
Miami	206	17	18	23	18	12	13	26	12	19	15	14	19	204	2	200	203	5	2	1	1
Monroe	171	23	17	12	26	11	9	18	14	10	8	10	13	170	1	166	170	2	. . .	3	1
Montgomery	268	32	34	24	25	20	18	25	23	14	10	16	27	266	2	260	259	. . .	. . .	8	9
Morgan	164	11	7	12	15	15	15	20	5	9	10	16	29	162	2	163	164	1	. . .	. . .	. . .

Newton	86	15	7	7	20	9	4	3	2	4	6	3	6	86	. .	56	57	30	28	. . .	1
Noble	190	22	19	21	15	15	22	18	9	9	12	16	12	190	. .	181	183	9	7	. . .	. . .
Ohio	52	6	1	3	3	8	5	5	6	2	4	5	4	51	1	40	39	11	12	1	1
Orange	149	20	23	9	14	13	6	15	10	7	12	13	7	148	1	149	149	. . .	. . .	. . .	. . .
Owen	189	17	12	12	16	20	15	10	6	7	18	28	28	188	1	187	188	1	1	1	. . .
Parke	136	16	9	6	6	8	12	19	13	8	10	16	13	135	1	127	134	9	2	. .	. . .
Perry	198	13	17	23	18	16	15	18	19	5	14	16	24	195	3	179	185	11	5	8	8
Pike	205	16	17	18	18	22	24	12	12	5	27	21	13	203	2	197	204	5	1	3	. . .
Porter	119	11	15	3	6	6	12	21	7	12	12	7	7	119	. .	91	90	26	26	2	3
Posey	286	30	15	27	23	31	26	17	20	37	11	19	30	265	21	273	277	9	6	4	3
Pulaski	93	6	11	3	10	8	13	5	6	6	11	9	5	93	. . .	81	86	10	6	2	1
Putnam	233	32	22	20	29	9	17	12	17	7	17	24	27	232	1	231	232	2	1	. . .	. . .
Randolph	301	36	23	36	32	21	17	26	15	20	25	23	27	293	8	299	299	2	1	. . .	1
Ripley	136	17	10	12	16	11	11	8	18	13	7	3	10	136	. . .	66	69	5	2	65	65
Rush	160	16	12	7	10	15	15	17	11	7	12	10	28	152	8	124	125	1	. . .	35	35
Scott	66	5	11	7	1	. . .	15	3	1	9	1	7	6	66	. . .	27	27	. . .	. . .	39	39
Shelby	285	24	27	21	21	33	28	24	24	19	16	24	24	282	3	273	273	5	. .	7	12
Spencer	262	30	25	26	34	20	33	20	20	19	18	17	. . .	249	13	258	259	4	2	. . .	1
Starke	78	2	4	5	10	6	18	12	6	4	4	5	2	78	. . .	55	59	16	16	7	3
Steuben	120	11	8	9	14	6	10	13	6	10	12	6	15	120	. . .	119	119	1	. . .	. .	1
St. Joseph	363	38	32	42	60	19	17	16	32	27	33	20	27	359	4	255	269	104	91	4	3
Sullivan	194	21	18	17	13	23	20	9	12	16	10	18	17	194	. .	194	194	. .	. . .	. . .	. . .
Switzerland	128	14	19	13	13	8	12	10	6	13	2	8	10	118	10	127	128	1	. . .	. . .	. . .
Tippecanoe	331	47	32	21	35	28	27	26	20	18	32	22	23	328	8	285	287	44	42	2	2
Tipton	216	24	22	19	24	16	19	20	10	17	14	14	17	216	. . .	202	203	3	2	11	11
Union	48	6	4	5	10	3	3	2	. . .	7	2	3	3	48	. . .	48	47	. .	1	. . .	. . .
Vanderburgh	295	35	28	24	26	29	19	28	35	18	17	16	20	264	31	253	272	38	18	4	5
Vermillion	105	8	9	11	15	8	7	17	4	3	6	6	11	104	1	102	103	. .	. . .	3	2
Vigo	513	58	54	53	65	32	41	47	21	19	70	17	36	497	16	465	479	48	33	. . .	1
Wabash	. .	. . .	. . .	. . .	. .	. . .	. . .	. .	.	. . .	. . .	. .	. .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Warren	71	4	11	5	6	9	3	6	4	3	9	8	3	71	. . .	68	69	1	1	2	1
Warrick	170	12	10	24	18	19	16	16	8	3	10	16	18	167	3	156	160	9	4	5	6
Washington	171	. . .	. . .	. . .	62	12	10	13	12	7	16	16	23	171	. . .	155	160	10	5	6	6
Wayne	318	27	38	26	37	14	23	26	21	27	16	27	36	304	14	300	304	16	10	2	4
Wells	212	16	15	21	19	30	15	18	24	14	15	7	18	212	. . .	199	209	13	3	. . .	. . .
White	134	10	13	13	11	12	16	13	6	15	8	4	13	134	. . .	131	132	3	2	. . .	. . .
Whitley	166	26	11	16	19	17	21	10	5	12	7	10	12	166	. . .	163	164	3	2	. . .	. . .
Total	18,840	1,999	1,826	1,688	1,890	1,502	1,501	1,564	1,282	1,189	1,332	1,365	1,702	18,508	332	16,239	16,498	1,293	999	1,308	1,343

TABLE B.

Number of Marriages in Indiana for Year Ending September 30, 1889.

COUNTIES.	Total.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		Over 80.		Not Reported.	
		Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.
Adams	165	3	46	114	97	26	12	11	7	5	1	4	2	1	...	...	...	1	...
Allen	391	2	70	253	259	94	38	21	14	15	5	3	...	2	...	...	...	1	5
Bartholomew	217	6	47	152	130	32	28	15	7	6	1	2	...	1	1	...	...	3	3
Benton	83	3	19	55	57	19	6	3	1	3	...	...	...	...	...	...	...	...	...
Blackford	78	2	36	42	33	26	9	8	...	...	...	...	...	...	...	...	...	...	...
Boone	217	1	76	162	114	32	14	13	9	5	..	3	3	1	...	...	...	...	1
Brown	79	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	79	79
Carroll	188	8	42	97	114	46	17	25	9	8	5	3	1	...	...	...	...	1	...
Cass	280	...	62	201	180	59	22	9	8	9	5	2	1	...	...	...	...	..	2
Clark	393	...	4	60	50	10	20	5	1	..	...	...	...	...	...	...	...	318	318
Clay	234	3	64	159	134	46	20	17	9	4	4	3	1	2	1	...	...	...	1
Clinton	165	3	49	111	92	33	12	9	10	5	1	1	...	2	...	...	...	1	1
Crawford	109	2	36	79	63	16	4	5	3	3	1	2	1	1	...	...	...	1	1
Daviess	220	1	46	151	142	43	17	15	13	4	2	5	...	1	...	...	...	...	...
Dearborn	241	...	...	...	...	...	...	...	...	...	..	...	..	...	...	...	...	241	241
Decatur	142	5	44	89	72	27	13	10	9	4	..	1	...	1	...	...	...	5	4
Dekalb	197	3	51	142	114	26	26	15	6	6	1	3	1	1	1	...	...	...	3
Delaware	315	6	95	228	176	52	32	14	5	11	5	4	2	..	...	...	...	...	...
Dubois	162	2	26	136	119	19	14	3	3	2	...	...	...	...	...	...	...	...	...
Elkhart	361	1	57	236	235	80	47	25	16	11	2	2	1	2	...	1	...	3	3
Fayette	93	...	13	70	67	16	8	3	1	2	3	..	...	2	...	...	...	...	1
Floyd	210	2	35	151	146	33	17	13	6	7	2	3	1	1	...	...	...	...	3
Fountain	234	1	75	166	127	42	14	11	8	1	5	5	...	3	...	...	...	5	5
Franklin	138	4	26	78	84	38	16	5	4	3	2	4	2	2	...	...	...	4	4
Fulton	172	1	54	123	90	21	7	5	2	2	5	6	...	...	...	...	...	14	14

Gibson	232	5	63	152	133	38	15	19	14	10	4	5	...	...	...	...	...	3	3
Grant	320	6	103	217	164	48	17	14	7	5	5	7	3	1	...	...	...	22	21
Greene	95	3	32	67	38	17	6	1	5	2	3	3	1	2	...	...	...	...	...
Hamilton	219	4	72	159	129	40	13	6	9	5	2	3	...	...	...	...	...	2	4
Hancock	137	...	45	100	73	24	8	2	1	2	7	6	1	1	...	...	...	2	2
Harrison	183	3	50	130	166	26	15	8	12	9	...	5	...	2	...	...	...	...	...
Hendricks	165	3	42	109	102	33	12	10	3	4	5	5	...	1	1	...	...	...	...
Henry	232	3	65	156	111	30	24	11	11	10	4	7	2	3	...	...	...	12	15
Howard	174	11	52	105	74	42	28	12	15	...	1	3	2	...	...	...	...	1	2
Huntington	236	8	72	171	139	37	16	15	6	2	1	1	2	2	...	...	...	...	...
Jackson	227	1	65	158	131	36	17	17	6	7	4	2	1	1	...	...	...	4	...
Jasper	104	2	25	67	63	22	9	8	4	3	...	1	...	1	...	...	...	...	3
Jay	215	4	64	157	124	31	16	11	4	5	5	4	1	2	...	...	...	1	1
Jefferson	312	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	312	312
Jennings	133	3	28	84	65	33	8	9	2	...	...	3	...	1	...	...	...	...	30
Johnson	189	1	8	11	9	4	...	1	...	...	...	...	...	...	...	...	...	172	172
Knox	266	2	52	155	146	51	24	17	8	7	1	2	1	1	...	...	...	31	34
Kosciusko	325	7	72	225	200	52	24	12	7	8	6	8	6	4	...	...	...	9	10
Lagrange	139	...	35	110	89	21	12	6	2	2	1	...	...	...	...	...	...	...	...
Lake	168	...	41	109	95	36	22	17	4	1	3	1	1	1	...	...	...	3	2
Laporte	254	2	52	173	169	54	21	11	4	9	6	4	2	1	...	...	...	...	...
Lawrence	174	2	54	123	94	29	17	10	8	5	1	3	...	1	...	...	...	1	...
Madison	288	8	79	201	122	46	21	15	8	11	2	3	2	2	...	...	...	2	54
Marion	1,038	4	181	674	675	241	123	64	30	22	5	9	...	4	...	...	...	20	24
Marshall	239	1	58	174	151	41	17	11	5	4	3	3	1	3	1	...	...	2	3
Martin	104	3	40	75	57	20	4	4	3	1	...	1	...	...	...	...	...	...	...
Miami	206	...	51	137	121	29	15	23	11	8	4	6	2	1	...	...	...	2	2
Monroe	171	4	54	123	92	22	14	10	7	7	...	1	1	...	...	...	...	4	3
Montgomery	268	2	44	166	167	53	18	9	4	5	...	1	...	...	...	...	...	32	35
Morgan	164	2	56	120	85	27	18	7	2	4	...	2	2	2	1	...	...	...	...
Newton	86	...	19	51	51	23	9	5	4	3	2	3	...	...	...	...	...	1	1
Noble	190	3	43	128	123	37	14	10	2	4	4	2	...	1	...	...	...	5	4
Ohio	52	4	10	41	35	2	3	2	1	...	...	...	...	...	...	...	...	3	3
Orange	149	5	33	91	84	18	16	8	1	5	4	2	...	...	...	...	...	20	11
Owen	189	5	51	108	79	20	10	9	7	8	3	1	1	...	...	...	...	38	38
Parke	136	...	42	91	69	26	13	9	9	5	2	3	...	...	...	...	...	2	1
Perry	198	1	55	125	114	45	15	14	5	3	...	...	...	...	...	...	...	10	9
Pike	205	4	74	134	103	36	13	18	8	4	3	7	3	2	1	...	...	...	...
Porter	119	...	22	84	76	23	12	7	4	3	1	1	1	...	...	...	...	1	3
Posey	286	3	71	197	164	50	25	17	14	11	3	2	...	...	...	...	...	6	9
Pulaski	93	...	33	61	47	19	7	4	2	7	2	1	2	...	...	...	...	1	...
Putnam	233	3	55	157	145	52	17	6	9	9	5	6	1	...	...	...	...	...	1
Randolph	301	9	102	210	158	42	23	21	9	9	6	6	2	2	...	1	...	1	1

TABLE B—Continued.

COUNTIES.	Total.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		Over 80.		Not Reported.	
		Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.	Gr.	Br.
Ripley	136	...	12	46	45	15	9	4	1	2	2	1	...	1	...	...	...	67	67
Rush	160	...	29	119	104	22	19	9	3	6	3	2	1	...	...	...	...	2	1
Scott	66	1	15	51	41	7	5	3	1	...	2	2	1	2	1	...	...	...	...
Shelby	285	6	80	187	149	47	25	18	18	6	3	8	...	1	...	...	...	12	10
Spencer	262	8	87	185	152	46	13	11	4	3	5	4	...	2	...	...	...	3	1
Starke	78	...	22	40	30	10	4	5	1	3	3	3	1	...	...	...	...	17	17
Steuben	120	2	33	75	66	26	13	8	1	4	5	2	...	3	2	...	...	...	...
St. Joseph	363	3	72	259	240	71	33	14	12	14	5	2	1	...	...	...	...	...	...
Sullivan	194	6	50	130	112	28	13	9	9	8	1	8	3	2	1	...	...	3	4
Switzerland	128	...	32	96	66	25	30	6	...	1	...	...	...	...	...	...	...	...	...
Tippecanoe	331	15	61	209	210	73	34	27	16	4	...	...	...	...	...	...	...	3	10
Tipton	216	18	112	131	71	35	15	6	4	6	2	4	...	...	...	...	...	15	12
Union	48	2	13	35	35	9	...	2	...	...	...	...	...	...	...	...	...	...	...
Vanderburgh	295	2	51	178	183	65	34	19	10	12	...	3	1	...	...	...	...	16	16
Vermillion	105	...	37	62	51	22	8	10	2	5	4	4	1	...	...	...	...	2	2
Vigo	513	9	140	336	255	86	71	44	33	22	10	14	4	1	...	1	...	...	...
Wabash	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warren	71	1	19	53	43	14	5	3	4	...	...	...	...	...	...	...	...	...	...
Warrick	170	5	48	117	94	29	18	8	6	5	3	...	...	1	...	...	...	5	1
Washington	171	5	45	113	89	19	8	7	4	4	2	...	...	1	...	...	...	22	23
Wayne	318	4	68	211	193	62	35	24	12	10	6	4	2	2	1	1	...	...	1
Wells	212	2	49	149	140	39	14	11	7	9	1	1	...	...	...	...	...	1	1
White	134	1	27	96	91	22	9	8	3	3	1	2	1	...	...	...	...	2	2
Whitley	166	3	50	124	98	29	13	9	4	...	...	...	...	...	...	...	...	1	1
Total	18,840	283	4,490	11,943	10,225	3,214	1,566	1,015	583	473	217	253	73	82	12	4	...	1,573	1,674

BIRTHS.

The total number of births reported for the year ending September 30, 1889, was 33,928. Of this number 17,719 were males and 16,209 were females; 591 were colored and 784 stillborn.

There were 319 twin births and 3 triplets; 581 of the children were illegitimate.

The smallest number (2,305) was born in November, and the greatest number (3,341) was born in July.

The nationality of the parents was as follows: 29,058 fathers and 30,185 mothers were Americans; 3,034 fathers and 2,166 mothers were foreign born; 1,419 fathers and 1,260 mothers were not reported.

TABLE A.

Births for the Year Ending September 30, 1889.

COUNTIES.	1888.			1889.									Male.	Fem.	Total.	COLOR.				NATIONALITY OF PARENTS.					
																White.		Colored.		American.		Foreign.		Not Reported.	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.				Males.	Fem.	Males.	Fem.	Fath.	M'th.	Fath.	M'th.	Fath.	M'th.
Adams	17	14	24	13	22	25	28	15	24	21	17	28	126	122	248	126	122	. .	.	197	207	35	17	14	22
Allen	154	45	45	41	28	44	24	16	2	34	42	26	273	228	501	273	227	. .	1	236	270	130	62	131	165
Bartholomew	48	39	61	41	43	41	49	56	59	48	62	64	320	291	611	319	285	1	6	546	577	44	21	13	5
Benton	21	15	12	17	16	24	15	19	13	21	20	29	115	107	222	114	105	1	2	197	199	20	18	2	2
Blackford	12	11	9	13	15	12	15	15	16	25	23	21	102	85	187	102	85	. .	. .	184	184	. .	. .	. .	. .
Boone	51	52	29	56	48	33	58	56	53	43	55	18	290	262	552	287	262	3	. .	532	540	4	1	15	10
Brown	7	6	6	10	18	15	13	21	15	16	14	2	64	79	143	64	79	. .	. .	139	142	. .	. .	3	. .
Carroll	38	20	26	38	45	46	48	23	20	49	33	22	218	190	408	218	190	. .	. .	340	326	38	54	28	26
Cass	15	21	14	20	24	35	13	10	25	35	31	17	147	123	270	147	122	. .	1	163	172	43	29	62	67
Clark	48	38	30	33	32	37	21	22	22	46	33	35	224	173	397	217	168	7	5	334	350	38	20	17	19
Clay	49	11	19	59	41	58	38	32	30	38	70	38	259	224	483	256	221	3	3	345	376	100	77	35	27
Clinton	. .	. .	.	9	31	21	26	36	39	46	34	41	141	142	283	141	142	. .	. .	177	178	. .	. .	100	99
Crawford	23	25	28	25	31	45	34	27	19	25	35	25	189	153	342	189	153	. .	. .	322	335	8	2	9	2
Daviess	35	37	47	49	63	64	71	49	43	43	66	77	336	308	644	330	306	6	2	629	629	5	5	. .	. .
Dearborn	29	19	21	21	17	14	33	16	10	30	20	18	134	114	248	134	114	. .	. .	213	221	27	18	5	6
Decatur	32	19	17	26	29	25	15	22	27	25	29	20	138	148	286	137	147	1	1	268	277	7	2	8	4
Dekalb	7	20	15	12	10	20	20	11	11	16	14	11	84	83	167	84	82	. .	1	132	155	26	6	7	4
Delaware	58	45	26	40	47	57	72	57	57	71	80	62	364	308	672	364	306	. .	2	655	653	11	11	2	4
Dubois	46	24	42	24	30	35	36	35	21	37	33	25	193	195	388	193	194	. .	1	367	373	21	13	. .	. .
Elkhart	46	42	33	74	34	54	67	57	54	37	37	30	288	277	565	287	277	1	. .	508	498	40	41	7	16
Fayette	10	8	11	19	18	8	14	12	9	25	17	16	96	71	167	93	70	3	1	151	157	11	6	3	2
Floyd	60	40	16	72	29	17	72	40	43	60	44	49	280	262	542	271	257	9	5	448	484	79	50	15	8
Fountain	9	16	12	9	8	19	13	19	15	13	11	9	88	65	153	88	65	. .	. .	141	145	7	4	3	2
Franklin	21	12	8	6	4	11	10	10	13	16	12	16	69	70	139	69	70	. .	. .	119	127	15	7	4	4
Fulton	36	23	26	29	26	25	23	30	25	36	23	18	165	155	320	165	154	. .	1	305	314	9	1	4	3

Gibson	64	28	16	29	27	40	40	21	23	38	37	31	213	179	392	206	173	7	6	371	376	15	10	2	2
Grant	41	35	44	19	23	25	36	29	22	23	17	24	195	143	338	188	141	7	2	327	332	8	3	2	2
Greene	8	6	14	34	18	28	23	20	26	21	27	16	154	87	241	152	87	2	. .	231	237	2	. .	4	. .
Hamilton	47	22	7	82	34	34	65	51	53	92	30	37	282	272	554	276	269	6	3	536	543	9	2	2	2
Hancock	34	35	24	36	44	32	39	29	29	29	35	22	194	194	388	194	194	. .	. .	363	371	7	4	13	8
Harrison	46	47	43	31	19	19	37	25	25	50	50	31	219	204	423	215	199	4	5	388	395	10	4	21	20
Hendricks	32	36	33	29	40	37	52	26	33	43	58	36	220	235	455	216	231	4	4	440	442	8	6	. .	. .
Henry	25	44	56	44	39	39	55	65	48	43	55	59	289	283	572	283	273	6	10	541	558	9	5	16	3
Howard	25	24	29	19	24	16	24	25	25	20	25	29	151	134	285	151	133	. .	1	279	280	6	5	. .	. .
Huntington	35	43	34	45	44	34	39	46	33	51	51	46	258	243	501	258	243	. .	. .	478	485	18	11	. .	. .
Jackson	42	35	54	58	23	35	45	38	51	58	31	109	290	289	579	286	289	4	. .	538	540	34	32	1	1
Jasper	16	6	6	30	4	12	11	16	16	13	23	9	81	81	162	81	81	. .	. .	150	154	5	1	6	6
Jay	58	34	30	58	46	34	51	22	37	75	53	40	287	251	538	283	247	4	4	471	494	26	11	37	29
Jefferson	24	18	19	27	22	15	16	19	19	20	12	6	135	82	217	125	78	10	4	188	189	7	4	21	23
Jennings	26	20	23	31	23	23	16	23	19	20	17	12	149	104	253	144	101	5	3	236	240	14	8	1	3
Johnson	26	27	29	33	27	31	28	24	31	33	32	22	192	151	343	189	151	3	. .	336	338	1	. .	1	. .
Knox	11	12	25	20	52	37	10	20	10	44	49	14	152	152	304	151	151	1	1	259	259	. .	. .	39	39
Kosciusko	64	18	31	38	35	36	38	25	24	72	37	42	248	212	460	248	212	. .	. .	440	448	11	5	7	5
Lagrange	32	17	20	21	25	15	32	17	13	20	21	22	130	125	255	130	125	. .	. .	241	242	10	6	4	7
Lake	34	25	22	13	11	22	15	19	3	3	12	4	81	102	183	81	102	. .	. .	111	121	68	59	3	2
Laporte	52	35	42	49	45	39	52	43	46	56	51	53	286	277	563	285	277	1	. .	311	344	219	199	30	17
Lawrence	19	20	24	31	30	55	28	31	11	33	33	33	186	162	348	183	161	3	1	283	294	8	1	54	50
Madison	52	37	37	43	44	45	39	44	47	55	48	40	289	242	531	289	239	.	3	518	518	7	4	4	7
Marion	224	175	196	212	224	233	228	218	188	184	194	192	1,317	1,151	2,468	1,216	1,070	101	81	1,714	1,903	562	437	165	101
Marshall	39	27	27	25	21	41	35	31	23	31	44	54	215	183	398	215	183	. .	. .	372	374	22	18	3	5
Martin	18	15	12	18	13	23	20	19	24	22	15	6	106	99	205	106	99	.	. .	196	201	3	1	5	2
Miami	21	22	14	20	18	29	25	19	31	21	24	22	151	115	266	150	115	1	. .	238	244	20	11	5	8
Monroe	23	13	19	30	25	10	29	15	14	36	31	29	141	133	274	137	130	4	3	259	264	4	1	7	5
Montgomery	54	35	29	54	49	48	34	46	27	58	53	56	259	284	543	259	282	. .	2	525	530	9	4	1	1
Morgan	23	18	26	21	15	18	28	28	21	37	28	24	155	132	287	154	132	1	. .	272	275	4	1	11	11
Newton	15	18	15	21	15	5	15	7	31	29	21	20	121	91	212	121	90	. .	1	126	124	54	56	32	32
Noble	5	5	4	2	4	1	18	15	16	26	16	20	76	56	132	76	56	. .	. .	109	117	12	7	10	7
Ohio	10	7	6	6	6	9	9	9	4	19	9	9	54	49	103	54	47	. .	2	93	100	10	3	. .	. .
Orange	47	15	9	17	16	16	22	17	12	20	11	13	113	102	215	113	101	. .	1	212	212	. .	. .	. .	. .
Owen	12	13	16	20	21	18	23	18	24	15	21	17	117	101	218	116	99	1	2	207	206	3	2	6	8
Parke	14	26	16	24	12	19	49	18	21	31	43	18	160	131	291	158	130	2	1	262	274	16	7	10	7
Perry	19	17	20	25	34	27	29	28	16	42	33	15	159	146	305	157	143	2	3	258	278	28	15	15	8
Pike	37	16	27	23	24	23	21	14	18	13	15	21	135	117	252	133	116	2	1	232	235	8	6	9	8
Porter	19	17	16	17	13	11	10	13	17	25	24	16	102	96	198	102	95	. .	. .	126	140	62	49	6	5
Posey	56	22	32	69	36	50	30	39	37	56	49	30	239	258	497	237	252	2	6	440	465	42	25	8	. .
Pulaski	19	7	8	13	13	15	8	10	12	14	13	23	80	75	155	80	75	. .	. .	121	128	21	14	13	13
Putnam	54	30	42	65	45	35	38	24	36	63	29	38	258	241	499	256	238	2	8	467	470	14	14	12	9
Randolph	53	42	46	56	53	70	79	47	36	69	66	63	365	315	680	359	312	6	3	627	652	26	7	15	9

TABLE A—Continued.

COUNTIES.	1888.			1889.									Males.	Fem.	Total.	COLOR.				NATIONALITY OF PARENTS.					
																White.		Colored.		American.		Foreign.		Not Reported.	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.				Males.	Fem.	Males.	Fem.	Fath.	M'th.	Fath.	M'th.	Fath.	M'th.
Ripley	21	13	9	26	23	17	25	30	25	20	22	19	126	124	250	126	123	. .	1	225	237	25	13	. .	. .
Rush	29	21	36	35	27	31	37	33	22	25	41	23	195	165	360	193	161	2	4	257	258	16	12	82	85
Scott	12	11	11	13	11	8	36	11	9	9	17	11	78	81	159	78	81	. .	. .	159	159	. .	. .	. .	. .
Shelby	61	21	11	64	35	24	49	33	23	75	50	22	224	244	468	221	243	3	1	417	430	17	8	26	22
Spencer	45	44	47	39	49	42	42	40	38	31	33	35	242	243	485	230	232	12	11	454	447	17	22	8	10
Starke	8	5	7	7	9	7	5	3	9	11	7	17	48	47	95	48	47	. .	. .	73	79	11	7	10	8
Steuben	4	2	2	6	7	5	26	16	15	9	9	9	67	43	110	67	43	. .	. .	94	95	. .	1	15	13
St. Joseph	27	23	18	25	25	24	42	41	20	48	50	39	197	185	352	197	185	. .	. .	253	265	124	114	4	2
Sullivan	37	23	11	30	16	23	13	24	17	10	22	36	131	131	262	131	131	. .	. .	251	253	7	6	2	1
Switzerland	14	10	12	9	5	12	9	11	14	11	15	15	69	68	137	68	67	1	1	135	136	1	. .	. .	. .
Tippecanoe	25	30	26	38	32	31	27	27	16	49	24	48	193	180	373	190	180	3	. .	265	267	81	68	26	37
Tipton	46	52	36	14	24	29	25	28	21	35	26	27	187	176	363	187	176	. .	. .	343	345	6	2	5	7
Union	9	5	5	8	4	9	15	6	3	10	6	4	50	34	84	50	34	. .	. .	84	84	. .	. .	. .	. .
Vanderburgh	100	89	96	101	110	60	79	82	53	112	73	85	505	535	1,040	471	505	34	30	687	816	318	215	28	2
Vermillion	13	15	16	8	10	15	15	14	20	11	11	12	79	81	160	79	81	. .	. .	155	156	2	2	1	. .
Vigo	133	49	57	99	78	35	163	45	61	97	69	66	481	471	952	464	455	17	16	801	845	133	91	10	8
Wabash	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. . .	. . .	. . .	. . .	. .	. .	. . .	. . .	. .	. .	. .	. .
Warren	6	4	2	8	8	18	3	13	11	6	8	3	46	44	90	46	44	. .	. .	85	88	4	1	1	1
Warrick	15	11	8	36	50	36	28	30	27	38	38	42	182	177	359	180	174	2	3	325	332	18	10	16	17
Washington	25	18	18	31	25	35	11	24	38	24	28	18	150	145	295	150	145	. .	. .	292	294	2	. .	. .	. .
Wayne	68	52	63	62	58	58	70	72	55	65	68	67	393	365	758	380	347	13	18	653	699	84	48	16	6
Wells	12	13	10	8	6	4	. .	. .		14	16	11	47	47	94	47	47	. .	. .	94	94	. .	. .	. .	. .
White	20	15	11	47	28	43	40	35	19	19	22	27	167	159	326	167	159	. .	. .	293	295	20	19	13	12
Whitley	41	15	14	12	29	25	27	22	26	33	31	30	155	150	305	155	150	. .	. .	223	230	8	2	68	67
Total	3,218	2,305	2,345	3,041	2,734	2,780	3,156	2,659	2,459	3,341	3,084	2,806	17,719	16,209	33,928	17,406	15,931	313	278	29,058	30,185	3,034	2,166	1,419	1,260

TABLE B.

Number of Births for the Year Ending September 30, 1889.

COUNTIES.	No. of Children.	NUMBER OF CHILDREN BORN TO THIS MOTHER.													GROUPED AGES OF PARENTS.														Still Births.		Plurality.		Illegitimate.	
		1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th & over.	Not Reported.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.	70 to 80.	Not Reported.							
															Fath.	Moth.	Fath.	Moth.	Fath.	Moth.	Fath.	Moth.	Fath.	Moth.	Fath.	Fath.	Fath.	Moth.	Male.	Fem.	Male.	Fem.	Male.	Fem.
Adams	248	60	42	42	29	17	15	12	5	4	2	3	7	10	5	28	88	131	89	70	33	15	12	. .	. .	. .	19	2	4	3	1	3	5	1
Allen	501	110	85	60	46	36	22	10	8	6	5	1	2	110	. .	20	159	228	161	124	69	20	15	.	2	. .	91	105	6	5	7	1	3	3
Bartholomew	611	148	118	102	68	54	39	33	15	10	7	1	7	8	3	31	164	264	253	225	131	66	32	10	3	. .	17	7	6	5	6	10	4	6
Benton	222	59	39	28	29	20	16	16	3	2	2	5	2	1	1	15	74	115	88	74	35	11	12	. .	1	. .	8	4	1	. .	. .	6	4	2
Blackford	187	52	52	35	16	13	7	6	1	4	. .	. .	1	. .	1	48	69	77	75	46	30	13	7	. .	. .	. .	. .	. .	3	3	. .	6	2	. .
Boone	552	133	116	99	64	39	27	33	13	12	6	2	2	6	6	53	212	311	199	135	63	32	27	. .	3	. .	41	20	8	4	2	. .	3	3
Brown	143	21	28	24	22	13	14	7	9	1	1	1	1	1	3	13	54	84	58	32	17	10	3	. .	. .	. .	7	3	. .	. .	1	1	3	. .
Carroll	408	95	72	60	49	49	37	15	11	14	2	1	2	1	5	33	150	182	185	141	52	42	8	. .	2	. .	4	8	2	2	1	3	2	. .
Cass	270	95	47	51	22	13	9	14	2	2	1	3	1	10	1	18	96	67	102	39	33	7	5	. .	. .	. .	31	137	5	4	3	1	1	1
Clark	397	104	89	63	51	31	14	13	9	3	3	2	. .	15	. .	33	159	195	159	105	44	10	8	. .	1	. .	18	46	. .	. .	10	6	. .	2
Clay	483	109	72	66	76	54	37	25	16	11	8	2	5	2	2	45	198	249	186	156	69	20	8	. .	2	. .	15	10	5	5	2	4	4	2
Clinton	283	81	54	58	34	15	15	12	2	4	3	2	3	. .	. .	23	121	165	109	71	31	13	4	. .	1	. .	11	5	4	. .	7	5	4	3
Crawford	342	73	64	58	34	24	21	17	20	12	5	4	. .	10	2	31	140	173	127	109	53	18	8	.	2	.	7	8	4	2	5	1	4	1
Daviess	644	147	104	102	82	58	37	38	32	13	10	7	3	11	1	46	246	330	251	222	107	35	16	. .	1	1	11	1	7	5	11	9	6	1
Dearborn	248	70	48	41	27	19	21	5	8	3	. .	3	3	. .	3	13	112	152	86	65	38	11	4	. .	. .	. .	2	3	1	2	2	4	3	3
Decatur	286	81	49	43	33	20	14	21	10	4	4	3	4	. .	2	30	104	132	105	95	48	18	9	. .	2	. .	13	8	. .	. .	3	3	. .	1
Dekalb	167	40	42	21	28	11	6	10	3	3	2	. .	. .	1	. .	8	70	101	64	46	19	7	6	. .	. .	. .	6	3	5	2	2	2	. .	2
Delaware	672	188	140	96	69	49	33	29	16	16	10	5	10	11	3	66	312	396	247	166	82	28	9	. .	1	. .	14	12	13	5	3	5	1	3
Dubois	388	70	68	46	46	41	33	25	21	20	9	3	6	. .	1	19	142	195	158	139	79	35	8	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Elkhart	565	143	123	83	66	56	44	19	7	7	3	3	1	10	1	29	203	240	174	164	78	55	25	2	. .	. .	74	65	13	9	12	8	9	6
Fayette	167	41	36	27	12	16	12	9	6	1	. .	1	4	2	2	10	59	94	70	44	25	12	5	. .	. .	. .	4	5	5	. .	3	1	2	1
Floyd	542	152	102	70	70	48	32	17	15	13	6	8	5	4	3	33	224	299	218	182	62	24	15	. .	2	1	17	4	10	4	. .	. .	1	3
Fountain	153	43	31	30	16	9	7	1	3	4	5	1	1	2	1	14	60	85	61	40	18	4	4	. .	. .	. .	7	8	. .	1	2	2	3	. .
Franklin	139	41	19	18	18	11	10	8	3	. .	. .	1	1	6	2	7	43	66	48	39	21	13	4	. .	. .	. .	20	13	. .	. .	.	2	1	1
Fulton	320	86	62	45	41	33	18	13	7	4	2	1	2	6	2	31	126	173	124	96	44	12	7	. .	4	1	10	6	2	. .	3	1	3	3

TABLE B—Continued.

COUNTIES.	No. of Children.	Number of Children Born to This Mother.													Grouped Ages of Parents														Still Births.		Plurality.		Illegitimate.	
		1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th & over.	Not Reported.	Under 20. Fath.	Under 20. Moth.	20 to 30. Fath.	20 to 30. Moth.	30 to 40. Fath.	30 to 40. Moth.	40 to 50. Fath.	40 to 50. Moth.	50 to 60. Fath.	50 to 60. Moth.	60 to 70. Fath.	70 to 80. Fath.	Not Reported. Fath.	Not Reported. Moth.	Male.	Fem.	Male.	Fem.	Male.	Fem.
Gibson	392	88	80	53	43	34	29	27	13	6	8	1	1	9	2	48	146	195	153	106	63	21	8	..	3	..	13	8	2	2	5	3	3	6
Grant	338	82	57	61	41	24	17	19	10	5	3	1	5	13	..	33	134	173	126	92	41	16	4	..	..	..	32	23	..	..	1	1	1	1
Greene	241	55	46	36	26	28	16	14	8	2	2	..	1	7	..	25	86	123	73	68	23	8	6	1	4	..	45	12	..	..	3	5	5	2
Hamilton	554	116	116	109	58	58	39	19	14	11	8	3	2	1	1	44	208	299	230	175	70	25	15	..	2	..	21	4	7	11	6	8	4	6
Hancock	388	93	72	58	51	40	28	17	10	10	3	..	4	2	1	26	101	161	167	135	84	55	12	2	3	..	15	4	6	4	8	2	4	2
Harrison	423	110	65	65	51	42	19	14	15	5	4	4	3	26	3	40	160	214	156	124	52	12	14	..	1	..	33	29	6	8	5	3	5	6
Hendricks	455	109	77	79	57	42	28	22	15	4	10	1	4	7	1	38	165	253	161	127	58	21	17	..	1	..	45	9	9	11	5	9	2	3
Henry	572	164	123	85	65	44	32	18	12	10	8	8	1	2	2	66	242	306	218	156	68	29	12	..	3	..	21	9	9	8	6	6	11	5
Howard	285	72	62	49	31	20	15	10	7	9	5	3	1	1	28	20	109	124	77	84	23	29	7	17	..	..	14	11	5	..	..	..	..	1
Huntington	501	148	96	95	51	45	25	17	5	6	4	2	1	6	3	44	211	284	209	145	50	19	13	..	1	..	9	4	5	1	3	7	3	3
Jackson	579	139	96	83	75	55	40	30	26	12	12	4	7	..	4	42	217	291	213	185	103	41	18	1	3	1	14	13	13	11	8	4	7	5
Jasper	162	49	28	20	21	13	12	5	4	1	5	2	2	..	2	11	65	91	59	41	26	15	4	..	..	..	5	3	1	..	2	..	..	..
Jay	538	138	97	97	57	45	28	25	11	18	4	7	4	7	1	56	219	267	202	159	76	32	10	..	1	..	25	20	8	11	4	4	8	1
Jefferson	217	43	43	40	25	19	11	14	7	3	4	..	3	5	..	13	74	105	87	47	18	7	3	..	1	..	33	44	2	1	2	..	1	2
Jennings	253	65	42	36	27	26	18	11	9	5	2	3	2	7	3	20	80	115	101	74	40	24	8	..	2	1	16	18	1	..	3	1	4	
Johnson	343	97	69	46	40	37	14	15	9	8	2	..	1	5	4	34	117	189	121	102	50	9	6	..	..	..	10	4	6	..	4	6	4	2
Knox	304	67	55	44	39	24	23	12	13	7	1	3	6	10	..	18	104	161	132	96	40	13	6	..	..	..	16	10	11	5	4	8	7	1
Kosciusko	460	124	106	82	51	46	13	13	10	2	5	3	1	4	3	32	191	267	171	113	54	26	10	..	..	1	28	20	13	3	3	1	4	1
Lagrange	225	76	55	33	29	22	18	10	7	1	2	..	..	2	..	19	106	143	96	78	33	11	7	..	..	..	13	4	..	..	..	..	..	..
Lake	183	43	43	30	14	9	12	10	5	6	6	1	3	1	..	18	80	104	65	44	27	13	8	..	..	..	2	3	..	..	2	..	..	..
Laporte	563	153	124	88	49	46	32	30	18	8	3	3	3	6	3	36	236	322	200	157	82	28	16	..	2	..	21	17	9	8	5	1	5	4
Lawrence	348	91	65	51	32	41	14	11	9	7	7	3	4	13	1	30	144	183	117	90	41	15	8	1	2	..	32	26	6	6	4	2	3	3
Madison	531	141	90	70	66	54	26	13	21	10	20	2	3	15	8	43	208	277	179	164	57	32	13	3	2	1	61	10	7	10	2	2	10	2
Marion	2,468	720	500	378	264	144	131	87	47	39	25	14	8	111	3	203	892	1,296	921	722	359	85	66	..	12	..	188	135	49	29	29	27	45	32
Marshall	398	121	78	59	43	28	19	22	11	7	4	1	2	3	1	39	173	222	142	106	58	19	11	..	3	..	9	11	4	8	1	1	3	1
Martin	205	48	29	26	19	20	9	17	14	4	7	5	..	7	1	11	68	107	87	71	31	13	9	..	1	..	7	2	4	1	1	1	4	2
Miami	266	66	58	36	35	18	18	14	6	2	3	4	2	4	3	26	123	153	79	69	46	13	3	..	2	..	7	2	6	..	3	3	..	2
Monroe	274	69	44	40	42	28	19	7	12	5	1	1	..	6	2	30	113	157	109	71	37	11	3	..	..	..	6	1	8	2	6	2	5	2
Montgomery	543	150	133	80	62	42	31	18	15	5	..	2	1	4	2	47	234	303	204	157	68	26	14	..	2	..	11	2	10	5	5	11	5	6
Morgan	287	82	52	37	39	18	18	21	5	4	6	..	..	5	1	26	109	139	89	68	27	13	8	..	3	..	50	41	10	5	..	..	1	1

Newton	212	59	51	26	13	8	16	8	7	. .	2	. .	1	21	1	14	65	86	74	55	21	7	4	1	. .	. .	47	49	. .	. .	. .	. .	. .	. .
Noble	132	51	27	20	10	9	3	4	2	.	2	1	1	2	2	7	40	49	36	33	7	1	4	. .	. .	. .	42	41	4	3	1	1	1	3
Ohio	103	18	29	19	9	11	5	4	2	2	1	1	2		.	4	42	56	41	35	13	8	4	. .	2	. .	1	. .	. .	. .	. .	. .	. .	. .
Orange.	215	51	44	37	30	14	17	7	4	4	3	1	. .	3	1	16	65	103	79	62	28	5	8	. .	. .	. .	31	26	1	1	2	4	2	4
Owen.	218	69	40	37	22	22	12	5	3	3	1	1	1	2	. .	11	104	141	75	50	27	10	4	. .	. .	. .	6	4	6	3	1	3	2	2
Parke	291	72	61	48	40	27	16	7	5	2	3	. .	1	9	3	19	120	183	122	68	24	10	5	. .	1	1	12	8	2	. .	4	2	2	2
Perry.	305	77	45	42	46	33	24	11	8	4	7	1	2	5	. .	28	116	154	118	103	42	11	10	. .	3	. .	12	5	4	1	5	3	5	3
Pike	252	69	58	31	34	23	11	9	4	4	4	2	1	2	1	28	109	143	91	61	27	10	7	. .	3	. .	11	7	6	4	2	4	5	2
Porter	198	49	42	28	32	12	9	7	6	3	3	3	1	3	. .	11	64	107	82	67	27	7	1	. .	1	. .	19	2	1	3	5	3	1	. .
Posey	497	109	83	79	63	50	32	24	14	15	5	3	6	14	2	41	180	264	206	156	67	19	13	. .	2	. .	20	10	7	3	10	4	3	10
Pulaski.	155	37	28	23	22	12	12	4	3	4	2	2	3	3	. .	8	52	78	42	41	31	9	4	. .	3	. .	23	19	2	1	. .	. .	. .	. .
Putnam	499	138	99	70	59	35	31	20	22	12	7	4	1	1	3	53	208	251	177	154	73	31	23	. .	. .	. .	9	4	8	4	6	*7	6	1
Randolph	680	152	139	118	79	60	42	31	21	15	11	1	4	7	4	63	321	369	228	194	81	32	12	. .	4	. .	18	10	8	8	*13	10	3	4
Ripley	250	66	42	32	35	18	19	13	9	8	3	3	2	. .	. .	8	102	131	101	97	37	14	4	. .	2	. .	1	. .	1	. .	. .	. .	. .	. .
Rush	360	87	72	52	37	31	24	19	8	4	10	2	3	11	. .	15	121	208	151	107	51	8	11	1	. .	. .	21	16	5	4	5	*6	2	. .
Scott	159	45	27	20	17	17	11	6	4	4	3	1	2	2	. .	21	60	70	57	54	30	10	6	. .	. .	1	5	4	1	. .	. .	. .	1	. .
Shelby	468	115	112	66	51	32	28	20	12	9	5	4	4	10	4	41	177	236	160	138	73	20	12		4	. .	30	25	6	6	8	8	3	2
Spencer	485	112	98	81	60	37	20	23	19	11	5	5	2	12	1	38	199	254	170	139	60	21	10	. .	5	. .	34	27	3	3	8	4	5	9
Starke	95	24	16	15	16	6	3	2	3	2	1	1	1	5	2	11	33	48	37	27	12	4	2	. .	1	. .	7	4	. .	. .	1	1	1	. .
Steuben	110	35	30	17	10	5	3	5	2	. .	1	. .	1	1	. .	8	51	56	26	24	13	5	1	. .	. .	. .	18	16	. .	1	. .	2	1	. .
St. Joseph	382	103	78	67	40	24	23	20	14	4	4	2	. .	3	2	28	175	216	138	115	60	21	4	. .	. .	. .	2	1	2	1	1	1	1	. .
Sullivan	262	77	60	31	26	22	14	4	4	12	5	5	1	1	3	36	119	148	86	57	32	8	3	. .	1	2	14	11	2	1	2	2	3	4
Switzerland . . .	137	40	26	16	18	13	8	5	3	4	2	1	1	. .	. .	12	47	64	43	36	25	6	2	. .	2	. .	17	18	. .	. .	1	1	1	1
Tippecanoe . .	373	124	77	48	45	25	15	6	9	2	4	1	1	16	8	36	152	203	123	89	51	18	9	. .	. .	. .	29	26	3	3	1	1	1	3
Tipton	363	91	74	59	36	26	20	14	10	5	10	3	1	11	2	55	156	184	132	90	46	22	11	. .	3	. .	4	3	5	3	10	8	2	5
Union	84	21	13	20	8	10	4	4	3	. .	1	.	. .	. .	1	4	30	45	38	29	12	4	2	. .	1	. .	. .	2	. .	. .	. .	. .	. .	. .
Vanderburgh . .	1,040	258	231	175	102	77	72	48	22	20	14	8	8	5	. .	70	393	558	430	319	135	49	14	. .	2	1	58	37	15	7	8	6	13	10
Vermillion. . . .	160	33	33	26	17	21	15	4	3	3	1	. .	.	4	. .	11	55	80	65	56	21	8	11	. .	1	. .	5	3	4	. .	4	. .	.	1
Vigo	952	274	184	150	108	68	50	46	23	20	13	1	4	11	1	68	412	547	378	254	131	73	19	. .	2	. .	1	2	8	12	7	9	16	11
Wabash	. . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Warren	90	26	16	12	13	5	5	5	2	2	. .	. .	2	2	. .	15	38	37	29	28	12	4	2	. .	2	. .	7	6	. .	. .	. .	. .	. .	2
Warrick	359	75	66	59	47	27	19	16	19	12	11	3	4	1	2	25	126	190	153	114	57	23	10	. .	3	. .	8	7	7	8	. .	. .	5	4
Washington . . .	295	75	58	33	38	26	18	9	7	7	4	7	4	9	4	24	104	135	114	100	38	15	10	. .	. .	. .	24	20	3	3	2	. .	1	2
Wayne.	758	229	180	109	71	48	41	24	18	15	11	6	5	1	1	50	313	427	289	232	123	43	17	. .	1	. .	9	1	21	8	4	6	9	11
Wells	94	25	21	11	14	13	4	2	3	1	. .	. .	. .	. .	. .	4	24	36	42	45	25	9	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
White	326	68	59	54	38	30	16	18	12	9	2	4	2	14	. .	17	112	183	129	97	62	21	10	. .	1	. .	12	8	11	6	. .	. .	1	4
Whitley	305	78	62	42	48	25	18	10	5	7	4	. .	.	6	2	20	121	165	111	103	48	8	9	. .	. .	. .	5	3	2	6	6	6	1	. .
Total	33928	8796	6684	5207	3905	2783	1974	1434	928	624	438	222	220	713	183	2755	13136	17733	12720	9881	4708	1796	881	39	133	12	1838	1407	470	314	343	304	321	260

* Triplets.

THE TIPTON COUNTY TWINS.

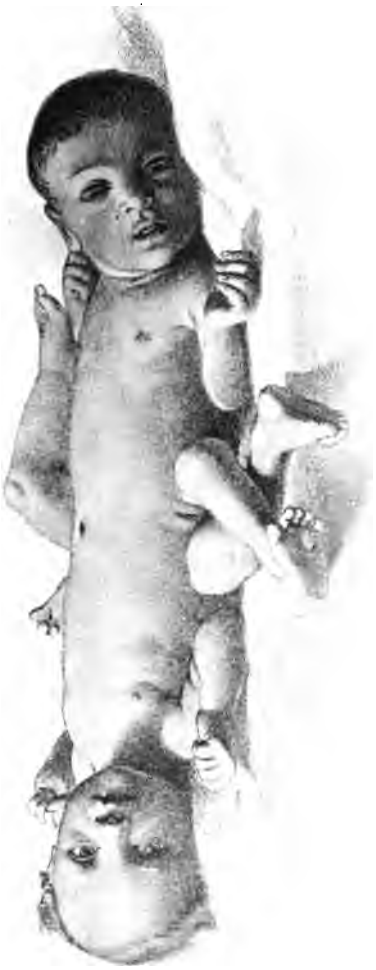
Through the courtesy of Dr. J. McLean Moulder, of Kokomo, we are able to present a cut of a monstrosity, girl twin babies, born to James H. Jones and wife, of Tipton County, on the 24th of last June.

These twins have become as great a curiosity as the Siamese twins were a number of years ago. They are now being placed on exhibition in the large cities of the country. A practicing physician was called to attend the mother in confinement, but arrived too late to assist in the delivery. An aged midwife, prominent in the neighborhood, was present at the birth, which was easy and almost painless. The father, James H. Jones, twenty four years of age, is a man rather more than medium weight and height, weighing one hundred and seventy-five pounds, and is five feet ten inches in height. The mother is nineteen years of age, very small of stature, and of slender form, weighing not more than ninety pounds.

They are Quakers, industrious and frugal, contented and prosperous, and enjoy the esteem of all their neighbors. Their first child is a girl, now nearly two years old, with a perfect physical development and a clear intellect.

There is nothing in the history of the parents or antecedents that could in any way explain the visitation of the mis-shapen twins. The following description was published a few days after the birth of the monstrosity: "The entire length of the body from head to head is twenty-three inches, and its weight is twelve pounds. Both heads are well formed and covered with a rich growth of beautiful black hair. Shoulders and arms are naturally developed. The spinal column is continuous, extending from one head to the other. There was only one umbilical cord, that a very large one, almost an inch in diameter. Its position is shown in the cut.

"The vital organs of the two infants are separate and distinct, the spine alone being continuous and common. Both faces are exceptionally bright and very beautiful. They have the appearance and expression suggestive of a month's age. They have bright blue eyes, and intellectually they show un-



usual precocity, both noticing attention bestowed upon them, and occasionally recognizing the same with a smile. Both have nursed at the mother's breast and from a bottle, and both have had natural passages from bowels and bladder.

"Respiration and heart action are natural and healthful. In temperament the two are apparently different. Both have been sleeping at the same time, but at times one has slept while the other was awake and restless. Neither has as yet shown any evidence of pain, having cried very little."

The following communication is from the eminent author and scientific specialist, George Jackson Fisher, M. D. His reference is to the Jones twins freak, and was published in the Kokomo Gazette-Tribune, July 18, 1889:

SING SING, N. Y., July 16.

Editors Gazette-Tribune:

My attention was attracted to your interesting issue of the 27th ult. by Burt. G. Wilder, M. D., Professor of Physiology, Comparative Anatomy and Zoology, Cornell University, Ithaca, N. Y.

For more than a quarter of a century I have devoted special study to the subject of congenital malformations and monstrosities, occurring both in man and in the lower forms of animal life, as well, also, of analogous abnormalities occurring in the vegetable kingdom.

This subject is embraced in the term teratology, upon which topic I have written the article in Johnson's Cyclopedia, and also in Buck's (or Woods') Reference Hand-book of the Medical Sciences (vol. vii, p. 1-27). Also four lengthy articles in the "Transactions of the Medical Society of the State of New York," 1865, '66, '67 and '68, embracing two hundred pages and one hundred and thirty lithographic figures. The literature of teratology is extensive and expansive. I have collected treatises, great and small, to the extent of four hundred titles, published during three centuries or more.

I mention these particulars to show of how much interest the case you figure and publish must be to me. Your case appears to you to be unique. This is not the fact. I have figures and descriptions of not less than eight almost identical cases which have occurred in the human being. Also, still more non-symmetrical cases, which belong to the same class, where the spinal columns lie in the same straight line, with the heads at opposite ends of the common longitudinal axis. In some of these the lower, or leg, extremities of one side are fused together, thus making three legs, and still others in which only one pair of lateral legs is developed. On these differences a classification has been based. This form of monstrosity is designated by the term Ischiopagus (joined by the seat-bones). To this generic name is added specific names thus, Ischiopagus symmetros, the symmetrical ischiopagus, to which the Indiana case belongs. Then we have the Ischiopagus tripus and dipus according as there are three or two pedal extremities. Most double monsters are of the female sex. In every form of double monster there is unity of sex. No exception to this law has ever been known. The second law is that of homologous union, that is they are always united by exactly the same parts of one with those of the other. They are not united twins. They are developed from a single ovum or egg (all animals are developed from eggs) in which a double germ is evolved. This explains the above mentioned invariable laws. Should you think best to publish this letter you are at liberty to do so.

Respectfully, GEORGE JACKSON FISHER, M. D.

[Reprinted from the AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, Vol. XXII., No. 9, 1889.]

AN ISCHIOPAGOUS MONSTER.

BY O. N. HUFF, M. D., CHICAGO.

(With woodcut and full-page plate.)

While away on a short trip with a friend during the first week in July, I heard of a very remarkable monstrosity. The report came so well authenticated that I determined to investigate it. Sunday morning, July 7th, 1889, found us at an humble farm house near the border of Tipton County, Ind. We were ushered into a small room where the wonderful babies with their mother were living. As we looked into the old-fashioned cradle, there appeared to us two separate and distinct infants, one slightly larger than the other, with their feet together and their heads lying in opposite directions. Nothing was exposed except the upper extremities, which showed two heads and faces, with the same complexions, color of hair and eyes.

When we asked the privilege of seeing them uncovered, we were flatly refused by the nurse, who said that under no circumstances would she do so. The news of "the remarkable freak of nature" had spread far and near, so that the lives of mother and babes were in danger from the morbid curiosity of the people. Again, they had received so many flattering offers from men of the "dime museum" type that they looked upon all strangers with suspicion. We were much disappointed not to see them exposed, but, after interviewing the father and convincing him that money was not our object, he promised us, if we would return in the evening after all visitors had departed, that our wishes should be granted. We were promptly on hand at the appointed hour. The nurse conducted us to the cradle and lifted the clothing, revealing to us a perfectly symmetrical ischiopagus. It followed completely the law that "*when two or more individuals are united in composition of a monster, double, or more than double, the union takes place between homologous surfaces of the bodies.*"[1] Their bodies, as they lie upon their backs, are in the same plane, form a straight line, and are literally placed end to end, the place of union being the pelvis. There are four well-developed feet and legs, two on each side of the line of fusion, and placed at right angles with the bodies.

Both are females. The genital organs and ani are situated on the side of the line of union, but occupy the normal position with reference to the legs on either

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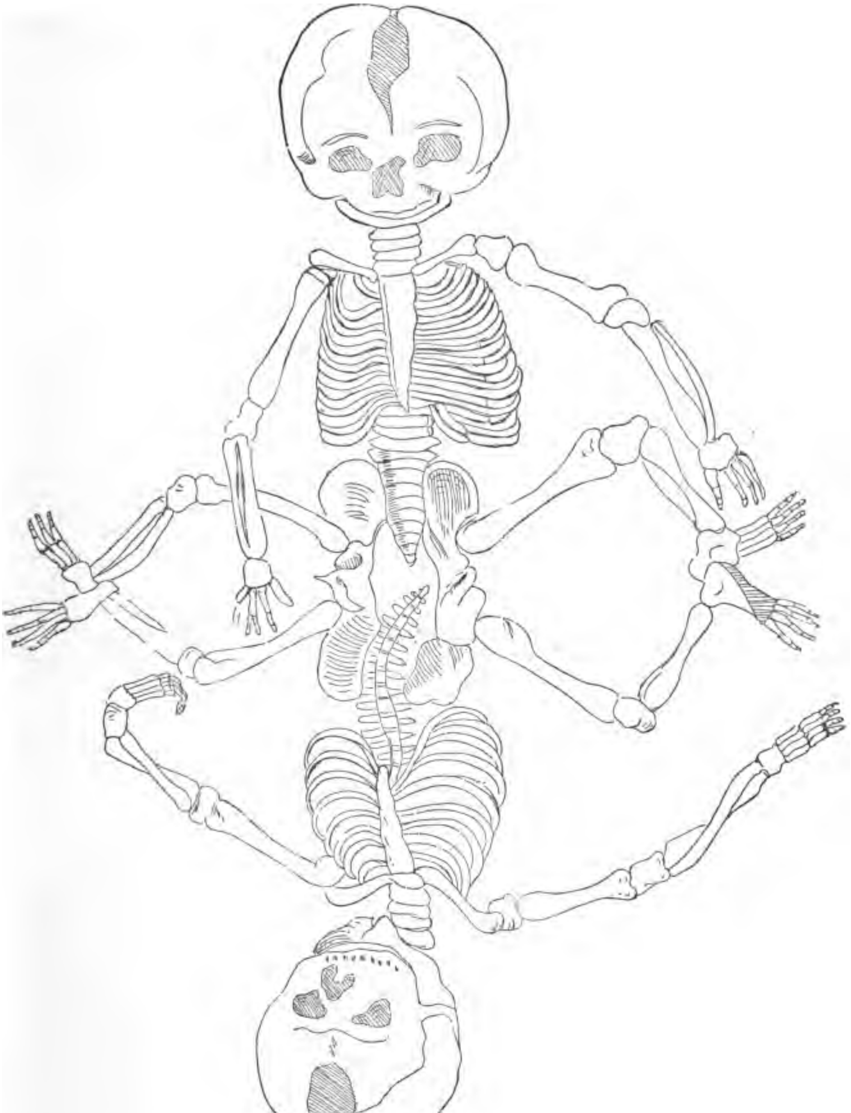
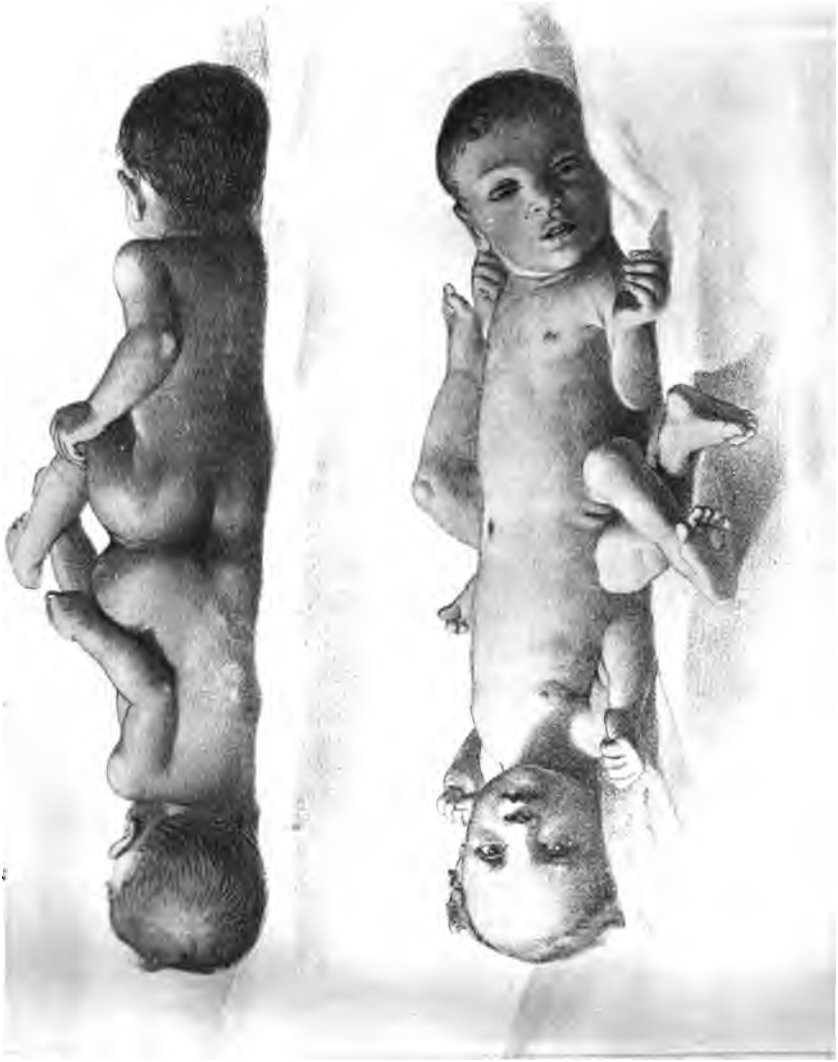
[1] W. W. Jaggard in "Cyclopedia of Diseases of Children" (Keating.)



SKELETON OF AN ISCHIOPAGE.

From Wood's "Cyclopedia of Obstetrics and Gynecology."



side. There was a common umbilicus, which entered the bodies at the center of the line of union. Both bodies, down to the iliac crests, are as well developed as babies ordinarily are at the same age. When the legs are outstretched they form with the bodies a complete cross.

Their weight at birth was twelve pounds, and their length twenty-two inches.

These wonderful babies were born to Mr. and Mrs. J. the night of June 24th, 1889, about 11:30 P. M. The labor was less than two hours in duration and was completed before the arrival of the physician. Fortunately, an old lady was near by who had had some experience as a midwife, and she was hastily summoned. In an interview with her I obtained the following interesting facts:

In reply to my inquiries, she said there was nothing previous to birth to arouse suspicion of anything unusual, except the extreme size of the woman, which had suggested the idea of twins. The enlargement extended high up toward the diaphragm.

When the midwife arrived at the bedside, the first head was already born. The pains were intense and close together, and the labor progressed rapidly until the pelvis was reached, when it was obstructed for a short time. The pains were soon renewed, however, and with a little assistance the labor was completed.

Each head, the midwife positively assured me, was born with the face directed to the back of the mother. The two legs in advance were born outstretched, while the other two were born folded on the body of the second child. The first child cried before the second one was born.

There were, apparently, two placentæ, firmly united together, and one very large and nodulated cord.

These wonderful children are still living. While one sleeps the other may be awake; when one cries the other may be in a happy humor. The digestive organs, bowels and bladders seem to act independently.

The most interesting feature of these twins is the anatomy of the parts between the crests of the ilei. Do the legs on one side belong to one child? Or does one leg on *each* side belong to each child? I was not permitted to lay my hands on them, and all the privileges I received were given with great reluctance, so that I can not speak with the knowledge I desire on this point. The midwife says both spinal columns are perfectly straight, with only a short space between their lower ends. If that be true, it would indicate that one leg on each side belonged to each child. The attendants say that when one is asleep and the other awake and moving its legs, one leg on each side does the kicking.

While lying in the mother's lap, both babies can nurse at the same time, one from each breast; thus partially folding on each other. I am inclined to think this is accomplished by bending the backs instead of the pelvic junction.

The mother is a well-developed, pleasant-faced woman, nineteen years old, of medium size and very dark hair. The father is a finely formed man, height about five feet nine or ten inches, and sandy complexion. There is nothing in the previous history of either parent which throws any light on this peculiar product. These babies are the result of a second gestation, the first being a well-formed child two years old.

Technically, the monstrosity just described is a very perfect example of a monomphalic ischiopage described by Charpentier (Wood's "Cyclopedia of Obstetrics and Gynecology," vol. iii, page 311), as "characterized by the union of two complete individuals fused together at the umbilicus face to face. The bones of the pelvis of one fetus, instead of meeting in the median line, are separated to the right and left to join those of the other fetus. We thus find two lateral pubic joints. The external genital organs are similarly arrranged, the right of one fetus being united to the left of the other, and *vice versa*."

In searching the literature on the subject, I find no recorded case of the same character born in this country. Preenay records one which lived several months; Serres another which lived a shorter time. There is the cast of an ischiopagus in the Mütter Museum, College of Physicians and Surgeons, Philadelphia, showing the legs on one side fused together.

Since writing the above I have seen and examined these chilren, and can give a more positive report on some points of doubt The spinal columns are straight and in close apposition at the lower ends. There is not the space of a finger's width between them. There are two pubic joints and arches, one on each side, with the pudenda and ani below them.

The evidence is conclusive that the pelvic organs of each child are deflected to the right side, so that the genital organs, bladder and annus of each child are situated on the right side. This is not true of the legs. The evidence is conclusive at this date that the legs belonging to each child are those nearest its body on each side. We still have them under observation, and hope to make another report some time in the future.

5 Washington Place, August 10th, 1889.

ADAMS COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health:

Dear Doctor—In reply to your circular of November 28, relating to the sanitary condition of Adams County for the year ending September 30, 1889, will state that the sanitary condition of the county has been good.

There have been no epidemics, a few cases of typhoid fever and diphtheria; no smallpox or scarlet fever.

The death rate in the county for the year ending September 30, 1889, has been exceedingly small, but not near so small as the reports I sent you would indicate. While the majority of the physicians in the county are prompt in sending in their reports of births and deaths, there are a few that are negligent, and others that claim they are not compelled to report, and will not until compelled to do so.

We attribute as the cause of the difficulty we have with the last named, the fact that they were, some years ago, interested in a test case in our courts, as to whether the law, providing for the physicians to report to the county secretary all births and deaths occurring in their practice, was unconstitutional or not. The defendants, through some course with which I am not familiar, were victorious, and since have failed to report, although we request them to do so at the expiration of each quarter. Our county asylum for the poor is in good condition, clean and well ventilated. The county jail is in good sanitary condition.

Respectfully, H. F. Costello, M. D.,
Secretary Adams County Board of Health.

BARTHOLOMEW COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health:

DEAR DOCTOR: The sanitary condition of this county during the year ending September 30, 1889, has been the best ever known in the history of the county. There has been much less sickness among the people since the old bugaboo, the so called malaria, has almost disappeared.

We had only 243 deaths reported from all causes during the year, which gives us a death rate of about ten per thousand, still we had an epidemic of measles which spread over the county during the months of January, February, March and April, which with their sequela caused ten deaths, as per reports of physicians.

There were eight deaths reported from typhoid fever, one of which was reported as malignant, but there appears to have been no spread from any of the cases. There was one report of scarlet fever and one death, but no spread of the contagion; one case of diphtheria was reported but no spread of the disease, therefore we conclude the disease reported must have been sporadic and not contagious.

Therefore I am of the opinion that our immunity from diseases is not due to more strict observance of sanitary laws by the people, nor do I believe that the sanitary improvements made in this county are in and of themselves sufficient to account for the general improvement in health experienced by the people throughout the county during the year.

Though many improvements have been made, more in the interest of agriculture than health, in the way of underdraining wet lands and reclaiming slash or pond lands for agricultural purposes, still they have at the same time been conducive of health.

These land improvements, with the light rainfall of the year, we think, will fully account for the good health enjoyed by the people of this county during the year.

This general betterment of health, with the greatly lessened mortality among the people, ought to prompt to make sanitary improvements on every hand, and likewise prompt to rigidly observe all the laws of hygiene, which would enable them to contribute to human happiness and increase longevity and still further reduce the mortality in the county.

J. S. ARWINE, M. D.,
Secretary.

CARROLL COUNTY.

Dr. C. N. Metcalf:

In answer to your circular of November 28, will say that we have had no epidemics of any sort. Diphtheria appeared here, but was promptly isolated and disinfected. The doctors of this county are not prompt or faithful in reports. The sanitary condition is good. Truly,

C. E. ANGELL, M. D.,
Secretary.

CLINTON COUNTY.

Your Secretary asks leave to make a report of the work of the office for the year about closing. When we came into possession of the records of the office, on January 1st, 1889, we found them in so neglected a condition that nothing could be gained from them. In fact, so little care had been given them, that from April 30, 1888, to December 31, 1888, not a single record was made. In the invoice of goods turned over by our predecessor, no blanks or reports of any kind were included, and when the State made demand for a report for the last quarter of 1888, we were utterly unable to make even a synopsis of the work. This fact was communicated to the State Board of Health, which replied in a letter severely reflecting on the Clinton County Secretary for such dire neglect of duty.

Immediately on taking possession of the office we secured and sent out to every physician in the county blank returns of births, deaths and contagious diseases, together with a circular letter containing the Attorney General's opinion as to the constitutionality of the law creating the Health Board, and the decisions of local courts on cases before them, and urged a united effort to redeem our county from the stigma of sending in the most meagre reports to the State authorities of any county in the State. This effort developed the remarkable fact that in direct violation of Section 10 of the act creating the Board, defining its duties and imposing a penalty for not reporting births, deaths and contagious diseases within fifteen days, physicians all over the county had been told by our predecessors that "it made no particular difference when the reports were handed in." Whenever a report came to us after fifteen days had elapsed we sent it back, explaining it as a violation of the statute. The effect of this was that reporting became more prompt, and we point with pride to the fact that for the nine months ending September 30, 1889, the records show that we have received and recorded 20 per cent. more births and deaths than were recorded in any preceding twelve months. And at this time we have received and recorded one and one-half times as many reports as in any preceding year.

But there is still room for improvement. There are sixty-two licensed physicians residing and practicing in Clinton County. Of this number twenty-nine (nearly half) have never made a report. Of the thirty-three who have reported, a large number have made but one or two, or at most three reports. According to these figures about one-third of the physicians have reported their work in the county.

One case of a man practicing without a license in this county was referred to me by the Secretary of the State Board of Health, with instructions to bring it before the authorities and apply the remedy. This I did, but the grand jury failed to find cause for indictment. There has been but one epidemic in the county so far as reported to us, and that was one of measles in and around Colfax. Some 221 cases were reported without a single death.

Dr. W. G. Smith, of Scircleville, wrote us asking us to close the public schools of that place on account of scarlet fever; but as no cases were reported from that place and as our authority did not extend so far, we declined to interfere. We never heard of the case afterward.

According to newspaper and neighborhood reports, the people of Jefferson and vicinity have passed through a scourge of diphtheria with several deaths, and the Frankfort Times reported that one physician had ten cases of that dread disease at one time. But as no report ever reached us of either death or disease, we have no reliable information concerning this matter.

A. S. McMurray, M. D.,
Secretary.

DEKALB COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health, Indianapolis:

Dear Sir—In reply to yours of the 28th ult, I would say that the sanitary condition of our county is good. Drainage is being carried on extensively, and the general health has not been better for years. Very few cases of typhoid fever this fall, and none have been reported to this office. There has been quite a number of sporadic cases of scarlatina; usually mild and in few instances affecting more than one member of the family. Cause not known. Isolation has been practiced. But one case of cerebro spinal fever has been reported. Source of contagion not given.

While the physicians of our county, as a rule, are active and energetic in trying to prevent the spread of these diseases, they are slow to report. Those who do, reporting late in the attack and more as a matter of routine than that they feel the need of the assistance of the Board. As a rule with us families are ready and willing to carry out any measure recommended by their physicians.

Yours fraternally,
B. S. Sheffer,
Secretary.

FAYETTE COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health:

Dear Sir — In answer to your communication calling for the sanitary condition of this (Fayette) County, for the year ending September 30th, 1889, I would most respectfully submit the following:

CITY OF CONNERSVILLE, FIVE THOUSAND INHABITANTS.

The sewerage of about one-half of the city empties into the canal, on which are situated three large factories, two planing mills, several stables and water closets, all of which, together with the Grand Hotel, empty their sewerage direct into the canal.

There are a large number of wells in close proximity to the canal, and eight or twelve cases of typhoid fever have been reported from that locality, two of which resulted fatally. From the formation of the soil in the above named district, which is a loose and porous gravel, together with the filth in the canal, and the present condition of the soil through which it runs, it would seem to be a prolific source of disease. I would further state that there is a large cemetery adjoining the city on the northwest line of the corporation. This is our only cemetery, and was founded forty or fifty years ago. South of the city and near the line, is a pond or small lake, the waters of which are drawn from this same filthy canal. From this pond is harvested in winter a large part of the ice which the city consumes in summer.

Another source of evil is caused by property owners who build tenement houses, or sell lots cropped off so as to get as many houses on as little ground as possible, which leaves so little space for each house, that wells and water-closets are frequently seen in close proximity to one another, some of which are twelve to thirty feet apart.

Others have built tenement houses adjoining the property of some of our citizens, and located vaults in such close proximity to their neighbor's wells as to either cause their abandonment, or run the risk of sickness or death in their continued use, thus inalert citizens are made the victims of the avaricious, grasping disposition of the rich land owners.

We will have malignant diseases and death as long as the above evils exist, if we do not have some strict sanitary laws to correct and restrain persons from violating the same.

The city should pass sanitary ordinances, and see that they are enforced—that will protect their citizens, from the very humblest and dependent to the rich and opulent.

We have had quite a number of cases of typhoid fever scattered over our little city. Some of them are on or near the canal, in the south part of town. The city is laid out parallel with the White Water River, which flows from north to south, on its east corporation line, and drains that part of the city. The old White Water Canal flows from north to south, the full length of the central portion of the city, making two water courses from north to south.

During our recent epidemic we had issued circulars and cards through our county and city papers in regard to our sanitary surroundings. We have seen that our citizens cleaned up and disinfected their premises; to the poor we have furnished disinfectants free of charge. Where wells were suspected of contamination, we have had them abandoned. We have thus reversed the order of the disease and cut it short in a much less time than was anticipated, and it is now getting lighter and more subdued as the season advances, instead of increasing with the fall months.

I have sent you water from four different wells in this city for analysis, and I herewith append the analysis and survey of the same:

WELL No. 1.

This well is situated on a lot 165 feet square; lot well graded; the soil is gravel, loam and clay, with sandy clay or hard pan at the bottom. The well is 38 feet deep and 112 feet from privy vault, and 72 feet from an old vault filled with lime, ashes and gravel, and abandoned four years ago. This well has been in use for forty years and no cases of typhoid fever have appeared in any family using its water. The water is drawn through a galvanized iron force pump.

ANALYSIS.

Appearance in two foot tube	Clear.
Odor when heated to 100° F	None.
Chlorine in chloride	3.
Free ammonia	.001
Albuminoid ammonia	.002
Nitrogen in nitrates	0.11
Solid matter	30
Solid matter ignited	Faint odor.

WELL No. 2.

This well is 36 feet deep, water from which is drawn through an ordinary wooden pump. The lot on which the well is located was originally a low, wet sawmp; it has been filled up with debris scraped from the streets, together with broken brick, stone and sand, and top-dressed with black loam. The lots east and north have been graded much higher, thus shedding their water onto it. The alley on the east is low and not well drained. The privy is 98 feet northeast of the well. The location of the lot and the character of the soil and the filling on sandy foundation, would indicate the percolation of surface water into the well.

This property is used for a boarding house, and it was here that eighteen cases of typhoid fever originated, three of which resulted fatally. It was at this house that the first case of fever occurred, followed shortly by four cases at the Buckly House and five at the Huston Hotel.

ANALYSIS.

Odor when heated to 100° F	None.
Appearance in two-foot tube	Clear.
Chlorine in chloride	2.4
Free ammonia	.001
Albuminoid ammonia	.002
Nitrogen in nitrates	0.1
Solid matter	36
Solid matter ignited	Faint odor.

WELL NO. 3.

This is a public well in the street on the Court House square; it is 36 feet deep; water from which is drawn through an old wooden pump; it is 90 feet from a privy vault across the street, and 80 feet from a cesspool in the Court House yard that receives the drainage from the water-closets in the Court House; there is also a privy in the same yard about 110 feet from the well. The soil hereabout is of a gravelly and porous formation. More water is used from this well than from any four or five wells in the city.

ANALYSIS.

Appearance in two-foot tube	Clear.
Odor when heated to 100° F	None.
Chlorine in chloride	6
Free ammonia	.005
Albuminoid ammonia	.0035
Nitrogen in nitrates	0.12
Solid matter	68.4
Solid matter ignited	Yellow color, sweaty odor.

WELL NO. 4.

This well is 38 feet deep and about on a natural level with the surface of the city. It is about thirty feet from the privy vault now in use and 30 feet and 45 feet respectively from two old vaults that have been filled up and abandoned. I am of the opinion that this lot is honey-combed over with old vaults and pits.

There is no sewer from this property, and the water and filth is carried off through open gutters.

An iron pipe has recently been driven down into this well about 30 feet below the bottom, making the well about 68 feet deep; it is now thought to extend below hard pan, and to be free from surface infiltration.

Five cases of typhoid fever developed at this hotel, three of which resulted fatally

ANALYSIS.

Appearance in two-foot tube	Clear.
Odor when heated to 100° F	Musty.
Chlorine in chloride	3.8
Free ammonia	.004
Albuminoid ammonia	.0033
Nitrogen in nitrates	.1
Solid matter	60
Solid matter ignited	Brown color, scorched odor, microscopical.

Water from all these wells contained more or less vegetable debris. No. 4 especially was rich in low vegetable forms.

Our Mayor and City Council gave us all possible aid, and used their official authority in assisting to check and stamp out the disease.

Our County Commissioners extended their unlimited support, and appeased all our efforts to stay the spread of the fever.

The physicians used every precaution, and advised isolation and free disinfection, and in every way aided to prevent the spread of the malady.

The officers, physicians and citizens deserve much credit for their concerted action in this time of peril.

I have had some little trouble in getting up all of the reports of cases of typhoid fever, and this report will show a few more cases than my quarterly report ending September 30th, 1889, owing to the fact that some physicians failed to report, and I was obliged to hunt up the cases as best I could, and now think I have a pretty full report. I find that there has been 38 cases of typhoid fever in the city of Connersville, six of which resulted fatally.

There were 36 cases in the county, two of which proved fatal.

The water supply at the County Poor Asylum is hardly sufficient, and I would recommend driving a well below hard pan, and putting in a force pump. The building is old and ought to be replaced by a new one with modern ventilating and heating apparatus. The old house can be made to serve a few years yet, as with the present high taxes and low prices it would prove a burden upon the people to build a new one. It compares favorably with those of other counties. The County Jail is in good condition, and is well supplied with water from the city water works.

In conclusion we would say it has been proven without a doubt that almost every case of typhoid fever has originated from bad water, defective sewerage and want of proper drainage. We have carefully examined all the surroundings, and located almost every case, tracing it to the very local cause that produced it, and by removing the cause the effect was seen in the abatement of the fever.

To prevent a recurrenee of typhoid fever we should have a pure and abundant water supply, a perfect system of sewerage and drainage, with good sanitary regulations rigidly enforced. Truly and fraternally yours,

W. H. GREGG,
Secretary Fayette County Board of Health.

GREENE COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health:

Dear Sir — The report of the sanitary condition of this (Greene) County for the statistical year ending September 30th, 1889, is indeed very good. We had no epidemic during the year.

We had about the usual number of isolated cases of typhoid fever, but the mortality from it was small.

Our County Asylum is in tolerably good condition only. We have a new jail in fine condition just completed.

Our school houses are not just what we desire, but think the future will bring better tidings.

The sanitary condition of the county is improving every year. The death rate is being lessened, and great good is being done by the physicians, as they get better acquainted with sanitary laws. The malaria element is being lessened every year, by our marshy lands being dredged and tiled out. There has been a vast amount of our low lands reclaimed in this county within the last two years. I do not know what course to take with the physicians that don't report. There are several that say they won't report, for we can't compel them. I have asked our Prosecutor to take it in hand, and see that they do make out reports and send them in, but he won't do it. Would be pleased to receive any suggestions you may think proper to make. Respectfully,

C. H. Edwards, M. D.,
Secretary Greene County Board of Health.

Lyons, Ind.

HAMILTON COUNTY.

C. N. Metcalf, M. D.:

Dear Sir — Your letter of November 28th received, and will say that the sanitary condition of Hamilton County, for the year ending September 30th, has been very good. Typhoid fever has not been very prevalent, and the per cent. of mortality has been light, with one exception. Near Westfield, in the past year, we had a number of fatal cases. The source of contagion was certainly impure water. There has been no cases of small pox or cerebro spinal fever reported in the county during the year, and but very few cases of scarlatina or diptheria. All cases reported were flagged and every precaution taken to prevent the spread of the disease. During the winter of '88 and '89 measles became epidemic throughout the county, several hundred cases occurring, most of them being reported. There were very few deaths in proportion to number affected. In most cases, the physicians report all cases of births, deaths and contagious diseases, very promptly, but in one or two instances it became necessary to have the Prosecuting Attorney notify them of their duty. Our Poor House has been very ably managed for several years, and the result is that there has been very little sickness in the institution. The sanitary condition of the Jail is also very good at this time. The building is comparatively a new one, and with proper supply of water can be kept in good sanitary condition.

M. C. Haworth, M. D.,
Secretary Hamilton County Board of Health.

HARRISON COUNTY.

C. N. Metcalf, M. D., Secretary Indiana State Board of Health:

Dear Sir — In accordance with our duty, and your request, we herewith furnish statement of the sanitary condition of Harrison County. The fact is, Harrison is all right, healthy and spry. No sickness worth mentioning during past year of contagious inclination, at least none reported. This is a Harrison year, you know, and Harrison is on a "boom."

Had small epidemic of typhoid fever in Corydon during July and August. Fifteen cases, two deaths—cause was variously alleged, to low water, cemetery, foul air, dust, etc. Typhoid bacilli in drinking water, was possibly the most active agent. A few sporadic cases occurred through the county. Harrison is a healthy, hale and hearty county, and a pleasant place to live. Yours truly,

W. Daniel.

HOWARD COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health:

The sanitary condition of the Jail, County Poor Asylum and Orphans' Home are all in excellent condition. The general sanitary condition of the county is good. There were no epidemics of any kind in the county within the past year. A few cases of diphtheria, scarlet fever and typhoid fever were reported, but prompt measures were resorted to to suppress them, and prevent their spread. The physicians are generally prompt in making reports of diseases as required by law.

Richard H. Smith, M. D.,
Secretary.

JEFFERSON COUNTY.

C. N. Metcalf, Secretary State Board of Health, Indianapolis:

The general health of Jefferson County for the year ending September 30th, 1889, has been good. We have not been visited by an epidemic of any kind during the year.

Typhoid fever, diphtheria, and measles were reported, sporadically only.

Care has been exercised, as far as possible, to isolate patients, sick of contagious diseases, and disinfection of premises has been practiced. Some of our physicians have been, and are careless about making reports, they persistently neglecting to perform that duty, the larger number reporting, but there are enough failures to destroy the usefulness of statistics thus gathered.

During the past year our county asylum has undergone a general renovating, which it was very much in need of. The building was originally badly planned, but it is now probably in as good sanitary condition as it is possible to place it.

The Jail, although defective in some particulars as regards construction, is well kept.

There is in this county a Children's Home, that we regard with a good degree of pride. It was organized by a band of noble women. Afterward the County Commissioners assumed a joint interest in its management and support, the "Childrens' Home Society" having the more immediate oversight. There is an average of from twenty-five to thirty inmates in the "Home." During the past year there has not been a single case of severe illness in the building, which speaks well for its management.

During the year we have had a number of mild scares in the county from rabid dogs. In February, 1889, quite a respectable "scare" was inaugurated at Dupont, on the northern boundary of the county.

I visited the locality and found excitement well up. A number of dogs had been killed, but others that were thought to have been exposed were at large, the owners declining to shut them up.

I succeeded in having them secured, and the excitement subsided.

The city of Madison has an efficient Health Board that works in harmony with the County Board.

WM. A. MCCOY, M. D.,
Secretary County Health Board.

LAGRANGE COUNTY.

Dr. C. N. Metcalf, Indianapolis:

In answer to your circular letter of November 28th, allow me to submit the following:

The sanitary condition of Lagrange County for the year ending September 30th, 1889, has been very good. The people generally are taking a greater interest in this department. Swamps are being cleared up and drained, and the water supply is attracting a good deal of attention.

There have been quite a number of cases of diphtheria this year. In no case reported has the cause of the outbreak been stated, but I am satisfied that the most of the cases were due to contagion. During the year there have been 143 cases of contagious and infectious diseases reported, to-wit: Diphtheria, 105; scarlatina, 18; typhoid fever, 17; measles, 3. Deaths from the above diseases as follows: Diphtheria, 14; scarlatina, 2; typhoid fever, 5. Whole number of deaths from all causes, 106; males, 54; females, 52. No. of births reported, 251; males, 131; females, 120. Number of marriages, 138.

The sanitary condition of the County Jail is good. The water is supplied from a large tank in the yard, which is replenished by a wind mill pump. The ventilation and sewerage are also good, and the Jail is kept in good condition. The County Infirmary is in first-class condition. Everything from cellar to garret is neat and clean, and the management is as near perfect as is possble.

Mr. Smith and his wife are certainly the right people in the right place. They are kind yet firm and the inmates all respect them. There are 20 inmates in all, the youngest 16 years, the oldest 85 years old, 4 insane, 4 epileptics, 1 idiot, 1 paralytic, and all feeble-minded with one or two exceptions.

We also have in this county the "Roger's Orphan's Home," which is a great advantage to the small children that would otherwise have to go to the County Infirmary. Dr. David Rogers, an eccentric old gentleman, who died in 1874, by his will bequeathed 160 acres of land to the County Commissioners, in office, and their successors forever, to be used as a home for poor children. It has taken all the proceeds so far to make necessary improvements, and the children have, necessarily, been clothed and fed at the expense of the county. The farm is rented to

Mr. J. B. Chandler, who lives on it and takes care of the children. He receives 28 cents per day for each child for his services. The sanitary condition of the "Home" is good.

There have been no deaths nor no serious illness among the children since the Home was established. The Home was established two years ago, and since that time there have been thirty-nine children received, twenty-four of whom have been taken away to be reared in respectable families.

September 30 there were fifteen children at the Home, all between two and twelve years of age. One is deformed from curvature of the spine, and three are deaf mutes, and all seem happy and contented. The physicians of this county, with few exceptions, have been prompt in making returns and assisting in controlling contagious diseases. A few have been very careless. I am satisfied there have been a few births and also a few cases of scarlatina that have not been reported, owing to the fact that no physician was called, consequently our reports are not as complete as they should be. In all cases of contagious and infectious diseases disinfection has been employed, but isolation has not been practiced to any considerable extent. Many families are poor, and the mother has to attend to the household duties and the sick also, and can not run up and down stairs. Others have not the room, nor the means to send the children away, so that it is impossible to enforce isolation.

A. R. Wyatt, M. D.,
Secretary.

LAKE COUNTY.

C. N. Metcalf, M. D:

Dear Doctor—During the year 1889 no cases of variola have been reported in this county. There has been no epidemic of typhoid fever nor measles. An outbreak of diphtheria occurred in the southwestern part of the county in October, and lasted about two months; the rate of fatality was quite large. The outbreak was probably favored by unsanitary surroundings, and in some cases a direct contagion could be traced. Precautions were taken to prevent the spread of the disease; schools were closed, the patients were isolated as much as possible, and all public gatherings were prohibited. A number of cases of scarlatina have been reported during the year; most cases were of the simple form; a few cases of scarlatina anginosa. The rate of mortality was small; the usual means to prevent the spread of the disease were employed. There have been no other epidemics in the county during the year 1889.

The county buildings are kept in fairly good condition. There are at present about twenty-three inmates in the Asylum. Few nuisances have been reported, and in all cases an attempt was promptly made to abate them, proving successful in the majority of cases.

Hoping that this report may prove satisfactory to you, I remain,

Respectfully yours,

G. D. Brannon,
Secretary.

LAPORTE COUNTY.

The general health throughout this county for the year has been fairly good. A sprinkling of scarlet fever has prevailed, cases being reported for every month except August, aggregating one hundred and eleven; exceedingly mild in form; involving a mortality of $2\frac{7}{10}$ per cent. only. It can hardly be said to have prevailed epidemically, being so widely distributed; a few cases here and there so mild that exposures were many and frequent before the disease was recognized. The usual precautions against infection were observed where the diagnosis was determined in time to make these measures available.

Diphtheria was also prevalent in every month of the year, ranging from nineteen cases in December to one in March, several of the fatal cases being reported as diphtheritic croup. The number of cases reported during the year was 117, attended by a mortality of forty-four or $37\frac{6}{10}$ per cent; $81\frac{2}{10}$ per cent. of the whole number was reported from Michigan City, and $67\frac{6}{10}$ per cent. of scarlet fever cases from the same locality.

In the latter city the sources of infection obviously appear in the depository of the sewage (the harbor) and the general water supply, both of which are conducive to the inception, continuance and encouragement of infectious and contagious diseases. At the same time efforts are being made to abate the dangerous nuisance.

The usual precautionary measures, I believe, are faithfully carried out, but of what avail can isolation and disinfection be where the water for general use and the air alike are perpetually contaminated?

Five cases of typhoid fever were reported, all of which were fatal, obviously carrying the suggestion that the diagnosis was determined by the result, since none other were reported.

Nine cases of measles were reported, with no fatality.

The agitation of this subject of sanitation and prevention of disease and death through sanitary measures, commends itself to all who have the general welfare of the community at heart, and is bearing fruit forty, sixty, one hundred fold, according to the fidelity with which sanitary measures are carried out.

R. O. Crandall, M. D.,
Secretary.

MADISON COUNTY.

Dr. C. N. Metcalf, Indianapolis:

The sanitary condition of Madison County speaks well for the industry and liberality of her citizens. There was a time not far in the past when surface water saturated her soil; when paludal causes of diseases in their protean types affected more or less her people; but now, since tiling her surface soil, those diseases have become almost extinct, except, as was the case in the city of Anderson last summer, when there was an unusual prevalence of a continued form of paludal fever, the result of grading streets and excavating cellars, bringing to the surface, to be impressed by heat and moisture, animal and vegetable matters, the malaria of which produced the more than usual prevalence of paludal disease. If positive cases of any of the contagious diseases have prevailed during the year in

Madison County they have been sporadic in every instance, and have required no unusual sanitary regulations to prevent their dissemination. The reported cases of diphtheria, scarlatina, rubeola, erysipelas and typhoid fever have been less than in years past, while not a case of cerebro spinal meningitis nor smallpox has been reported, and we conclude by saying that the laws of nature have been harmonious, and the great *I Am* has dealt kindly by the good people of Madison County. Respectfully yours,

I am, etc., C. N. Branch, M. D.

MARSHALL COUNTY.

C. N. Metcalf, M. D., Indianapolis:

Dear Doctor: By inspecting the sanitary condition of Marshall County we find it as well as could be expected. We have not had any diseases where unsanitary condition of the surroundings could have been the exciting cause.

We have had epidemics of measles, whooping cough and scarlet fever, the last one named being the greatest this county ever witnessed. During the months of last April and May there were hundreds of cases, mostly of a mild form and very few deaths. December and January witnessed the commencement of another epidemic, but our people being educated, during the other siege, to keep the patients isolated, we soon had the pleasure to see this one come to an end.

By the co-operation of the Boards of Health in the incorporate towns of Argos, Bourbon and Bremen, we have been able to suppress all nuisances prejudicial to health.

The Poor Asylum is located near Tyner City on the L. E. & W. R'y, seven miles north of this place. It is kept by a good man, who looks closely after its sanitary condition.

The County Jail is well suppled with water from the city Water Works, and the water closets, the floor and the whole interior is kept scrupulously clean with its water.

With the exception of the prevailing epidemic of la grippe, Marshall County at this time, January 30, 1890 is enjoying the best of health. Respectfully yours,

J. H. Wilson, M. D.,
Secretary.

MONTGOMERY COUNTY.

C. N. Metcalf, M. D., Indianapolis:

Dear Doctor—The past year has been an unusually healthy one in this county. There have been no epidemics of any kind, and the number of other acute diseases was very limited.

A controversy arose between the health officers and some of the other physicians and citizens of the city in regard to the closing of the public wells. The wells were reopened, but only after they had been thoroughly cleaned and cemented down to hard pan, so as to shut out the surface drainage.

We now have a good Court House and Orphans' Home, thanks to the liberality of the present Commissioners. The sanitary conditions of both buildings is good, with the exception of three cells at the Court House. I have frequently called the attention of the Commissioners to this, but as yet without avail.

Physicians report everything quite promptly, with the exception of deaths and cases of typhoid fever. As yet these reports are far from complete.

Respectfully yours,

C. E. Rankin, M. D.

NEWTON COUNTY.

To the Secretary of the State Board of Health:

The sanitary condition of our county has been very good the last year. We have had no epidemics prevailing in our county, except measles, and whooping cough. We have not had any small-pox, no typhoid fever; some sporadic cases of scarlatina and diphtheria. No cerebro spinal fever. Physicians neglect reporting these sporadic cases. There are a few physicians that won't report their death losses. Respectfully,

J. F. Beckner, M. D.,
Secretary.

ORANGE COUNTY.

C. N. Metcalf, M. D.:

Dear Sir—During last year we had a widespread epidemic of scarlet rash, and also of measles. No deaths from rash and but very few from measles. We have had our usual number of typhoid or typho-malarial fevers, with very satisfactory reports, the death rate being lower than previous years. Our county jail is well cared for by the officers, and kept in the best condition possible with its very imperfect drainage and ventilation. The county asylum is insufficient in every respect, and will be replaced by a new one during next year. Reports by physicians unsatisfactory.

Respectfully,

James W. Montgomery,
Secretary Orange County Board of Health.

PERRY COUNTY.

Dr. C. N. Metcalf, Secretary State Board of Health:

Dear Doctor—The sanitary condition of our county has been very fair during the year; there were no cases of small-pox, scarlatina, cerebro-spinal fever nor diphtheria. There was an outbreak of measles at Tell City; the fatality was almost *nil*, lung and aural complications frequent. A few typhoid fever cases were reported, but on investigation it is my opinion that there were more cases of asthenic fever than enteric (so called typho-malarial). The water supply is from wells almost exclusively in some localities, but I notice that of late two cisterns are dug where one well is sunk. Public wells are also being abandoned. Out of a great many public wells in Tell City only two are used now, the others being either filled up or converted into fire cisterns. One of the public wells in use yet is 70 feet from any building, and 35 to 40 feet deep; the other is 25 feet deep and close to the inlet of a stone culvert, and, though there has been no sickness among the families using water therefrom, they have been repeatedly warned and the city has refused to aid in making repairs on well (this well is open, covered by box, and water is drawn by windlass). Cannelton has several public wells, all are open (box and windlass) except one, which is closed by stone top and has wooden pump. Some of the water out of this well was analyzed and found unfit for human consumption because of excessive organic matter and nitrates. A ventilating shaft was inserted and notice posted on pump, and since then the water is only used to water stock, while previously it furnished all the drink for the employes of the cotton mills. The school officers and teachers of our county are generally willing to enforce any hygenic measures brought to their notice, and I think township trustees ought to consult health officers before building school-houses, in order that the sanitation of the same may be of the best.

Our towns are beginning to realize that proper drainage is a great factor in the healthfulness of a place, and the penuriousness peculiar to small places is giving way, as they are being convinced that matters are a general as well as individual benefit, and that money thus spent is wisely spent. I have found that with mild and persuasive methods more is accomplished than by forcible and threatening attitudes. Health matters in form of inspections, etc., are comparatively new in this county, partly on account of former inertia of health officers and indifference of people, and almost daily when these matters are explained one is answered: "Oh, is that the way of it? We thought it was only the work of some cranky doctor who is trying to cause us trouble and expense."

The sanitary condition of the county jail and poor-house is not all that could be desired, but the first has been for the present year almost unoccupied, and the latter has been well managed by the superintendent, who has done all he could to improve the condition of inmates. A great many improvements might be made were the finances of the county such as to warrant any expenditures except those absolutely necessary.

Yours most respectfully,
CHAS. M. BRUCKER, M. D.,
Secretary Perry County Board of Health.

POSEY COUNTY.

C. N. Metcalf, M. D., State Health Officer:

DEAR DOCTOR—The people of Posey County are taking more and better interest in public sanitation than heretofore. One evidence is the building of an asylum for the poor at this place, containing about one hundred rooms, well ventilated and well equipped with baths, steam heating, electric lights, water works, and good sewerage. The location is high and well drained. The building will be completed March 1, 1890, and will cost $30,000.

The condition of the jail, with a little improvement of its sewerage, will be good from a sanitary standpoint. The court house is well sewered.

There has been no epidemic of contagious diseases during the year ending September 30, 1889, but there have occurred in the county thirty-seven (37) cases of scarlatina, twenty-nine (29) cases of diphtheria, and twenty-two (22) cases of typhoid fever. The rules of the Board of Health have been fairly well observed in all these cases.

I have succeeded in having the village council of Poseyville, this county, appoint a Health Officer for the village, which act I believe will improve the health reports from that vicinity. At this time Mt. Vernon, New Harmony and Poseyville each has a health officer. Yours respectfully,

D. C. Ramsey, M. D.,
Secretary.

PULASKI COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health:

Dear Sir—The sanitary condition of the county for the year ending September 30, 1889, is good. A few cases of typhoid fever, scarlatina and diphtheria. No cause known. Only ordinary means employed to prevent their spread. Physicians promptly reported such cases and cheerfully assisted the local Board of Health. Isolation not practiced. Disinfection used.

Yours respectfully,

J. J. Thomas, M. D.,
Secretary Pulaski County Board of Health.

RIPLEY COUNTY.

Dr. C. N. Metcalf, Secretary State Board of Health:

Dear Sir—In reply to your letter of November 28, I would state that the records show, during the year ending September 30, 1889, thirty-nine cases of measles, seven cases of typhoid fever and two cases of diphtheria. There has been an epidemic of measles in this county during the last year, and it is probable that many cases have not been reported. The cases of diphtheria and typhoid fever were sporadic and the cause is unknown. I think that isolation and disinfection have been practiced, and that the majority of physicians have promptly reported such cases to the local Board of Health. The sanitary condition of the public institutions of the county is good, and the general health of the people is remarkably good. Very respectfully yours,

John W. Robinson, M. D.,
Secretary Ripley County Board of Health.

SHELBY COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health, Indianapolis:

Dear Doctor — In reply to your circular letter of inquiry as to the sanitary condition of Shelby County during the fiscal year ending September 30th, 1889, I would state that the following contagious and infectious diseases have been reported: Measles, 10 cases; typhoid fever, 4 cases; scarlet fever, 30 cases; diphtheria, 4 cases.

No cases of small-pox nor cerebro spinal fever were reported during the year. I would further state, in regard to measles, that during the fall and winter of 1888 and 1889 there was an epidemic of that disease throughout the county, but, on account of physicians not being called only in complicated cases, it was impossible to get correct reports, so no great effort was made in the matter. As to typhoid fever, it has been impossible to get physicians to report their cases promptly. However, there was no great prevalence of the disease during the year, and most cases were of a mild form.

I would say in regard to scarlet fever, there have been several cases in two or three different localities in the county, but most cases have been of a mild character, deaths only occurring from complications and sequela.

In all localities where contagious or infectious diseases prevail I distribute health circulars and insist that the directions be carried out I would say in conclusion, that the sanitary condition of our public buildings is generally good. Some of the outbuildings for our public schools are not kept in the condition they should be. Respectfully,

I. W. Trees, M. D.
Secretary Shelby County Board of Health.

STARKE COUNTY.

C. N. Metcalf, M. D., Secretary State Board of Health, Indianapolis:

Dear Sir — In compliance with your request, I report the sanitary condition of Starke County as very good. Our County Infirmary has been kept in good condition as to cleanliness, and the food is as good as the majority of the farmers in the country provide for their own families. Disinfectants are freely used, both in main and outbuildings. The health of the inmates has been especially good, but three deaths occurring within the year, and those of old people. The new jail is of brick and stone, is nearly finished, at a cost of from ten to twelve thousand dollars, and I think will be all right as to drainage, etc., when completed. We have had no outbreak of disease during the year, until within the last three or four weeks, since when four cases of diphtheria have been reported to me, two of them fatal. I have heard in the last two days of three more cases, but have no report. Can find no cause for the outbreak. I have had two of the schools closed for the present, and have done what I could to have disinfectants used.

Yours truly,
S. S. Bonar, M. D.,
Secretary.

TIPPECANOE COUNTY.

Dear Doctor—In most respects the sanitary condition of our county is good. Occasionally a stagnant pool of water may collect and evaporate. A dead horse, cow, and quite frequently dead poultry are noticed decaying in various places; but the domestic animals and fowls are most generally buried. The county, generally, is clean and healthy.

The city of Lafayette is webbed with gas-pipes. Most all the people now use natural gas. I do not know that it will add health to the ones who use it.

Typhoid fever has been epidemic and very fatal in many places. There have been no cases of small-pox. Scarlatina has made its appearance as usual, but generally not very fatal. Diphtheria never fails to find us, and is quite malignant when it does. A few cases of cerebro-spinal fever have been recorded. This fever generally proves to be fatal.

It would be difficult for me to give the correct cause of these outbreaks; perhaps many cases are due to contagion by carelessness. The most of them might be traced to the germ theory. La grippe is everywhere with us, and occasionally causes a death. In most cases this disease proves to be harmless.

The outbreak of diseases are generally suppressed by isolation to prevent their spread. Disinfection is most always resorted to. The doctors generally do their duty.

Very truly,

REUBEN R. MOFFITT, M. D.,
Secretary.

VERMILLION COUNTY.

C. N. Metcalf, M. D., Indianapolis, Ind :

DEAR DOCTOR—In reply to inquiry as to the sanitary condition of this county I will say there are no local or general unsanitary conditions now, nor none during the past year, to which my attention has been called.

Yours truly,

M. L. HALL, M D.,
Secretary Vermillion County Board of Health.

VIGO COUNTY.

C. N. Metcalf, M. D, Indianapolis, Ind.:

MY DEAR DOCTOR—I am glad to see the good work you are trying to do, also to note that you are accomplishing much good by your genteel but firm methods. Just keep on, Doctor, and the little State of Indiana will rank second to none in its sanitary laws and regulations.

Here in Vigo County we are getting along nicely, and are pleased to record the fact that for the year ending September 30, 1889, we have been exceptionally free from all contagious diseases excepting measles. Diphtheria, not over fifteen cases (I mean well authenticated cases) and those scattered Scarlatina, some thirty cases, not over three of those fatal, scattered over the entire county, sporadic in nature and not clearly traceable to any known cause. Whooping cough was quite prevalent, but so far as known to me none fatal. Smallpox was an entire stranger during the whole year. Our physicians in this county, as a rule, are particular and conscientious; each one tries to do his whole duty, and so far as possible tries to report promptly all contagious diseases, and at the same time uses all means at his command to stamp it out and prevent its spreading. This, of course, arises from two important facts, viz.: One, intelligence in the physician and his desire to do his entire duty in complying with the law and protection to the people; the other one lies in the fact that my immediate predecessor, Dr. J. R. Crapo, labored hard and faithful, while county health officer, to instruct the physicians in complying with the strict letter of the law and in seeing that they did. This makes it comparatively easy for me to continue in the good work mapped out by him, which I am trying to do and succeeding fairly well.

Our death rate from all causes during the year ending September 30, 1889, was about nine per thousand. This is a very remarkable showing, considering we live on the Wabash and considered unhealthy. It must not be forgotten that we have a large hospital here, and many cases of consumption die there credited to this county, which really do not belong here. If such cases were deducted from the list, our death rate would be somewhat reduced.

I think it the duty of every physician in the State to assist each county health officer in his labors and thereby bring up the record accurately, for I believe that if statistics are worth anything, the more accurate the more valuable. As a rule, we have no trouble to get reports from physicians, but the midwifes who are allowed, by the grace of an ignorant legislature, to continue their labors, while the educated M. D. must procure a license—it is from these that we have the most trouble to procure returns. I also note in the quarterly return of births, the extremely small returns of colored children born. I can account for that only by saying that a majority of them are attended by the midwife, who is either ignorant of the law or too ignorant to write, yet she can continue legally in her line of business. Oh for the day when we can sing, happy day, happy day, when the quack midwife is done away. Again I say, dear doctor, go on with your good work and we will all help you.

Sincerely,

LEO J. WENISTEIN, M. D.,
Secretary.

WAYNE COUNTY.

Dr. C. N. Metcalf, Secretary, Indianapolis, Ind.:

DEAR SIR—The health of Wayne County has been fair for the year, except in the city of Richmond and a small territory around Elkhorn Falls, where there was an unusual amount of dysentery in the months of July and August. There has been no case of small-pox nor cerebro-spinal fever during the year, and while there have been reported thirty-nine cases of diphtheria and forty-one cases of scarlatina, neither of them could be called other than sporadic in character. Typhoid fever has also been only sporadic, as the fifty-nine cases reported have been scattered over the county. It is not at all likely that the entire number of either typhoid fever or diphtheria cases have been reported, but full reports would probably not show any locality having many cases.

In the Orphans' Home, in a suburb of Richmond, there were forty inmates—thirty-six orphans and four attendants. About the middle of August a fever broke out among the inmates, and within two weeks twenty-three of them, including the matron of the institution, were suffering from the disorder. Most of the cases were light and not long continued. A number were severe and lingered for three or four weeks. Generally they presented the symptoms of irregular malarial fever, but three of them assumed the characteristics of typhoid fever, and were so reported, and one of these died. What caused the outbreak is a mystery, and whether it is possible that these varied febrile disturbances could have arisen from the same cause is still undetermined.

Respectfully submitted,

JAMES F. HIBBERD, M. D.,
Health Officer Wayne County.

WHITE COUNTY.

Dr. C. N. Metcalf:

Regarding the sanitary condition of White County we can report favorably. The county is becoming well drained both by open and tile ditches. There have been no epidemics, but two cases of diphtheria reported, and several cases of scarlatina, which have been isolated as much as possible.

A number of cases of typho-malarial fever were reported during the fall and early winter, and two or three deaths from the same.

The sanitary condition of our jail is bad, owing to the absence of sewerage. It is also insufficiently heated and ventilated. The County Asylum contains a number of inmates, all of adult age. We think the house should be warmed by a furnace, as the stoves will not properly heat the room in which is confined an idiotic patient, who, according to the Superintendent, will not keep any clothing on him. The house should be so arranged as to separate the male from the female inmates.

The Orphans' Home contains six children, who have been in good health during the past year. The sanitary condition of the various school houses has been reported to you direct by the teachers.

Some of the physicians of the county do not report, therefore our report is incomplete. The next grand jury will investigate.

A report came from Chalmers, in the west part of the county, that a butcher had killed a diseased cow. We went immediately to investigate, and had the meat buried, and no further complaint was made.

Citizens of Idaville complained of some disagreeable places, and investigation proved the truth of the report. Strict orders were given property owners to clean up, which was done.

White County is coming to the front respecting good health, drainage, agriculture and raising good horses.

DRS. ROBISON AND MCCANN,
Secretaries Board of Health, White County.

WHITLEY COUNTY.

C. N. Metcalf, M. D.:

DEAR DOCTOR—Your request of November 28 received. The health in this (Whitley) county during the past year has been remarkably good. There have been no epidemics of any kind. We have had a few cases of scarlatina, not more than five or six; none fatal. A few cases of measles last spring; not general over the county. As to typhoid fever, there were two deaths from the disease here in the city, both due to hemorrhage of the bowels. No other deaths from the disease reported in the county, though there were several cases in different localities, not more than two or three in the same neighborhood, and usually very mild. No diphtheria worth mentioning up to September 30, though the disease is now prevailing at South Whitley, a town in the southwestern part of the county. Two deaths have already occurred there during the past week; does not seem to be spreading at present; think it is well under control.

The physicians here in the city have been very prompt in reporting all cases required by law, as also are most of those in the surrounding towns. A few, however, fail to report. I think there would be little difficulty in getting reports from all physicians in the county but for the fact that the office of Secretary of the County Board has been given usually to some particular friend of one or more of the County Commissioners without regard to fitness for the position or his standing in the profession throughout the county. Many of us have become disgusted and have withheld reports to show our disapproval of the methods of the Commissioners. This has had some effect on the County Board of Commissioners, but at the same time those who have ceased to report do not in all cases readily begin again. I think, however, if the newly appointed Secretary will make the proper effort he will have no trouble on that score.

Yours respectfully,
D. E. WEBSTER, M. D.,
Secretary.

ZYMOTIC DISEASES.

The whole number of deaths registered within the year from all causes, exclusive of still births, is 14,722. Of this number the zymotic diseases caused 4,006 deaths, of which 2,029 were males and 1,977 females. In 1882 for nine months the whole number of deaths caused by this class of diseases was 3,200; in 1883, 3,835; in 1884, 3,950; in 1885, 4,375; in 1886, 3,733; in 1887, 4,714, and in 1888, 4,588.

ZYMOTIC DISEASES.

DISEASES.	1883.		1884.		1885.		1886.		1887.		1888.		1889.	
	Per cent. of mortality to zymotic diseases.	Per cent. to total mortality.	Per cent. of mortality to zymotic diseases.	Per cent. to total mortality.	Per cent. of mortality to zymotic diseases.	Per cent. to total mortality.	Per cent. of mortality to zymotic diseases.	Per cent. to total mortality.	Per cent. of mortality to zymotic diseases.	Per cent. to total mortality.	Per cent. of mortality to zymotic diseases.	Per cent. to total mortality.	Per cent. of mortality to zymotic diseases.	Per cent. to total mortality.
Cholera infantum	13.55	3.49	16.48	4.14	14.33	3.77	14.3	3.7	16.08	4.3	17.69	4.1	14.97	4.16
Croup	5.26	1.35	4.68	1.17	6.19	1.62	5.7	1.4	6.93	1.3	4.8	1.2	4.54	1.23
Diphtheria	8.05	2.07	6.05	1.52	9.39	2.47	10.	2.7	11.13	3.05	7.67	2.	9.33	2 54
Dysentery	4.14	1.06	5.62	1.41	5.46	1.43	4.2	1.1	6.04	1.01	6.86	1.25	5.04	1 37
Fever, malarial	9.54	2.36	7.49	1.88	6.76	1.78	3.	.7	2.7	.07	2.55	.68	3.24	.88
Fever, scarlet	2.97	.76	4 5	1.13	4.45	1.17	7.2	1.1	3.7	1.03	3.53	.94	3.14	.85
Fever, typhoid	16.01	4.11	15.08	8.79	17.09	4.5	16.	4.1	15.06	4.17	19.13	5.1	20.16	5.49
Fever, typho-malarial	2.89	.74	3.97	1.	4.02	1.05	3.5	.7	2 84	.07	1.94	.05	1.77	.47

The State and local Boards of Health have worked together harmoniously in their efforts to prevent disease and improve the hygienic condition of the State. That the united efforts of the various Boards has accomplished much by an energetic enforcement of sanitary laws, rules and regulations is apparent from the fact that while the population of the State has rapidly increased, the total mortality from preventable diseases has remained about the same, or shows a slight decrease. Above we present a comparative table showing the per cent. of mortality during the past seven years from eight principal zymotic diseases. The comparison is first made with the whole number of deaths from this class of diseases, and second with the total mortality from all causes.

They are all preventable diseases. When they make their appearance in a community their spread can be restricted, if not entirely prevented, if the precaution is taken to enforce the proper sanitary regulations. Each one of the diseases of this class has a special cause which continually reproduces itself according to its original type or pattern. This special cause is a germ or micro organism that determines the stages and symptoms of the sickness which its access to the system has created. These microbes or germs may live for years outside the body, to be aroused into activity when received into it. Whether all kinds of filth, decaying animal and vegetable matter originate and develop these parasites or not, it is true that the presence of such conditions will favor their preservation. These germs gain access to our systems through the necessaries of life, air, water and food. Each disease has its own particular germ or seed that will produce the disease which it represents, when taken into a susceptible body.

Dr. Robert Barthlow says: "A grain of wheat sown in suitable soil produces wheat only." The same law governs the germs of disease. They produce their own kinds of disease, and age after age manifest themselves by the same external symptoms and internal changes of structures. The product developed by the growth of its germ may take on some peculiarities of form, but remains typical always in respect to essential features. The soil in which the germ is planted may not be adapted to it; may be cold, barren, and otherwise hostile; the germ may be stunted or blighted in its course of development, but if it grows at all it will be found to present, always in some recognizable shape, the true characteristics.

The microbes or germs of zymotic diseases which are capable of reproducing themselves will always be found in the excretions of the body. Take for example, typhoid fever, in the stools. Not only are multiplying germs found complete in their development, "but spores having a greater power of resistance to destructive agents and having the potentiality of indefinite millions of parasites."

Filth nourishes these destructive agents of health and life. Filthy surroundings, and the emanations therefrom, and the inhalation of sewer gas, etc., depresses the vital powers of the human body, and renders it more susceptible to the baneful influences of the disease germ when it obtains access to it.

The number of persons infected by any one of these diseases in any community depends on the number of parasites present in the air, food and water, and the susceptibility of those who receive them.

These diseases are always with us, and some of them are as virulent and communicable as small-pox; for instance, scarlatinia and diphtheria, which cause more deaths in one year in our State than small-pox and cholera combined ever did. If either one of the latter diseases were to make its appearance in any locality of the State the surrounding country would be alarmed, and the local board, together with the State Board of Health, would immediately be appealed to, to institute vigorous measures to prevent its spread and if possible to at once stamp it out, and still they will allow preventable diseases in their midst to pass almost unnoticed, which annually cause thousands of deaths.

Scarlatina and diphtheria are of far more importance to the active sanitarian than either small-pox or cholera; the tenacious character of their contagion is well known. Houses have been thoroughly cleaned and disinfected to which families have returned to lose their last child.

Scarlatina is so mild sometimes that it is not known that a child has had it until it sickens with its sequel (acute albuminuria) or has communicated it in a more virulent form to others. This also is true to some extent of diphtheria. The mild cases have frequently been the means of communicating these diseases in a virulent form through our public schools. Whenever any of the communicable diseases make their appearance in a neighborhood, great care should be exercised by the people to prevent their spread.

If a child that is attending school complains of any of the symptoms of the prevailing sickness, it should be taken out of school and kept at home, isolated until the disease has had sufficient time to develop. It is always well in such cases to call a reputable physician to determine what is the matter. If this course was always pursued the health and lives of many children would be spared. There are many preventable communicable diseases (such as measles and whooping cough) that the people, as a rule, do not endeavor to keep their children from taking, that yearly destroy more lives in our State (if not directly, indirectly, by their sequels) than small-pox.

What are the best means to be used in restricting and preventing the spread of communicable diseases, and what are the best methods to be employed in securing the co-operation of the general public in the work required to be performed in their restrictions?

The establishing of isolation hospitals has been suggested for the reception and treatment of those sick with contagious and infectious diseases as a more economical and effective method than treating the patients at their homes.

At the present time the consideration of the erection of such buildings in this State is entirely out of the question, and therefore we will not discuss their importance.

The important thing to do when a person is taken sick with a communicable disease is, without delay, to place him in charge of a nurse and completely separate him from the well, and allow no one to visit him during his sickness except the nurse and physician.

The room should be comfortably heated and well ventilated, from which curtains, carpets and all unnecessary furniture has been removed. All excretions of the body should be disinfected and also the clothing and everything else connected with the sick room, before it is removed. Every person who has been exposed to the disease should be prohibited from visiting their neighbors and friends and mingling with the general public until the period of incubation has passed.

After the recovery or death of the patient the sick room and everything connected with it, together with the entire premises, should be throughly disinfected, and to thoroughly disinfect means to kill all disease germs that may be lurking about. Can this be done? Some say it can not, while others say it can be. Whether the destruction of all germs can be accomplished or not, cleaning and disinfection of the house should be practiced in as thorough a manner as possible.

In order to accomplish these things the co-operation of the medical profession must be secured, and this can best be done in the way suggested by one of the leading sanitarians of the country, "by educating the people who employ and pay physicians, so that the people will prefer the physician who acts for the prevention of disease rather than one who does not so act. Public sentiment will then make co-operation easy. It is asking too much of the medical profession to ask physicians to go far in advance of public sentiment in efforts for preventing the spread of communicable diseases. Self-preservation is as much a "first law of nature" to the medical profession as to other classes of human beings. It is fair to assume that, in the future as in the past, physicians will continue to lead in philanthropic work, especially in this branch of sanitary reform, but I consider it the duty of practical sanitarians (certainly the duty of all of us who are connected with State Boards of Health) to see to it that, so far as possible, public sentiment be constantly advanced so as to keep pace with the rapid progress in the medical profession.

If we expect physicians to co-operate with us in efforts to prevent the spread of consumption or any one of the diseases mentioned in the proposition, we must ourselves lead off and allow them to co-operate, and not expect them to do all ot the work."

The same gentleman says: "One of the best methods of securing the co-operation of the general public is the popular sanitary convention. Here scientific nomenclature is cast aside and the truths of science are clothed with the language of the people. Here statistics become charged with the enthusiasm of the speaker, the inattentive become attentive, and the blind begin to see."

Many of these conventions have been held in our State, but not as many as we desired. In the places where they have been held, prominent ministers, lawyers, doctors and laymen have not only read papers, but have taken an active part in the discussion of the subjects brought up for debate. The papers read and matters discussed have always commanded considerable space in the public press, and in this way the people have become acquainted and been made familiar with much pertaining to the prevention of diseases which probably would never have reached them in any other way.

For years this Board has employed another method to compel the attention and co-operation of the people, and that is the distribution in those localities where the people are threatened with sickness and death of circulars giving full instructions how to restrict and prevent communicable diseases. It is found that the people will read such literature when their own homes are threatened with disease, whereas if it was to come to them at any other time it would probably reach the waste basket unread. Health officers have pronounced them "a great help in restricting the spread of disease." "But the educational effect of the distribution of these pamphlets in this manner, their effect in forming public sentiment favorable to the restriction and prevention of disease is of even greater prospective importance than is the immediate result."

REPORT OF THE NORTHWEST SANITARY DISTRICT.

BY JOHN M. TAYLOR, M. D.

The material now in my hands, from which to construct a report, is so nearly like that of last year that it is useless to exhibit it again in detail.

Some improvement in the condition of county jails and asylums can be noticed, but reform in their construction and management advances slowly and hesitatingly. Owing to the present depression in all the industries and the business of the State, and the restlessness of the people under the burden of taxation, we must expect that the coming year will show less of fruit of this kind, proportionate to the amount of effort expended, than has the one just passed.

The same complaint relative to the sewage of the Northern Prison still comes from the health officers of the county in which Michigan City is located. The people who live along the line of extension of the open ditch that carries the waste of the prison, still suffer more than their more fortunate neighbors. The new ditch that is being dug straight to the lake, leaving the town upon the right, it is hoped will carry the waste where it will hurt no one. The writer, after a careful survey of the line of extension, fears that this hope will not be fully realized. It seems to him that during the prevalence of northwest winds the refuse will be driven upon the shore, and back into the harbor, and possibly may so accumulate as to prove a nuisance and a menace to health.

The company controlling the old Wabash & Erie Canal have complied with the order of the State Board of Health, and have opened their embankment near Lafayette, so as to permit of the draining of a contiguous swamp. This swamp had long proved an eyesore and a pest to the people of the vicinity and to it was traced the origin of much of the sickness with which they were afflicted from time to time. It is confidently expected that with the thorough drainage of the swamp the health of the neighborhood will be improved, and acres of tillable land will be reclaimed.

The apparent contradiction that appears when the reports of the sanitary inspectors are compared with those of the Secretary of the State Board of Charities, arises from the fact that the inspections are made from widely different standpoints. The sanitary inspector concerns himself with sanitation and general hygiene alone, while the other considers only the moral and social aspect of the management of the public charities and corrections. It can easily be shown that the publications made by the State Board of Health of the sanitary condition of the asylums and jails of the State, so far from exaggerating the matter rather, falls short of stating the whole truth.

At the instance of the writer, plans are now being drawn for a county asylum, such as in the judgment of the State Board of Health, will meet all of the requirements, including those of economy. These, when completed, will be published in the Board's annual report, and it is hoped will prove of great assistance to Commissioners who are desirous of building or remodeling.

DIARRHŒAL DISEASES.

Under this head we have grouped together cholera infantum, cholera morbus, diarrhœa, dysentery and entero-solitis. The whole number of deaths caused by this class of enteric diseases is 1,050. The greatest number, 704, or 67 per cent. of the whole number, died in the months of July, August and September.

The disease attended with the greatest fatality was cholera infantum, which caused 600 deaths; 317, or 52.85 per cent., were under one year of age. As a very large per cent. of the victims of these diseases are children under one year of age, either the ignorance or the negligence of the parents in caring for them is very largely responsible for so many being taken to an early grave, that have perished from diseases easily prevented by the observance of a few hygienic laws. Especially is this true in the cases of cholera infantum and the summer diarrhœa of children. Too frequently, mothers refuse to look after and care for their own offspring as it takes too much of their time from the gay pleasures of the world. The little child, in the beginning of life, is placed in charge of a nurse who may be entirely ignorant (generally is) of the duties to be performed; knowing nothing about the proper feeding, cleaning and clothing of a child, and having only a mercenary interest in its welfare.

If she be a wet nurse, the probabilities are that at the time of her engagement no investigation has been made to determine if she be free from disease, or whether the germs of consumption, scrofula or syphilis be present in her system.

Often the wet nurse is dispensed with and the child is nourished with milk from a cow diseased with tubercle or cancer, or else upon some one of the numerous already prepared infant foods "sold by all druggists," or given food only fit for the stomach of an adult. There is no food so healthy for an infant as its mother's milk. All others are frauds when compared with it.

We insist that mothers should always nurse their children unless they are physically incapacitated. Clothing and cleanliness of the child are also neglected, and pure, fresh air and sunlight to develop its growth are seldom considered.

These are a few of the causes that play an important part in the development of this class of diseases in children. The following are some of the causes which tend to produce this class of maladies in all stages of life:

Unsanitary surroundings of homes, such as defective plumbing and house drainage, soil moisture, decaying animal and vegetable matter, depressing influences of warm weather, improper clothing, want of cleanliness, crowd poison, drinking polluted water, and eating tainted and unwholesome food, and the every-day violation of well-established health laws. There can be no doubt but that the prevalence and mortality of these diseases can be materially lessened by strict observance of sanitary and hygienic laws.

DIPHTHERIA.

Within the year the total number of deaths reported as being caused by this disease was 374, an increased mortality of twenty-two when compared with that of the preceding year. As a very large per cent. of the deaths occurred under ten years, it shows that children are particularly susceptible to the influence of the specific germs of the disease. Adults, however, do not always escape their ravages.

It is both a contagious and infectious disease, with a material cause, a specific germ, which has been within a few years clearly defined by Klebs.

Moisture aids its spread and increases its malignancy, prevailing more frequently and with greater fatality in neighborhoods that are damp and chilly, its dissemination being aided by impure water and contaminated air.

Local unsanitary conditions and surroundings, poor ventilation, crowd poison, defective house drainage and sewerage, and the presence of decaying animal and vegetable matter, contribute largely to its propagation.

That each case is an infectious center, from which the disease may spread, should be recognized by all.

Dr. O. W. Wight, the late efficient Health Officer of Detroit, after many years of experience in sanitary work, lays down the following propositions after investigating several thousand cases of diphtheria:

1. "The gaseous emanations of filth, organic matter in process of putrefaction, is the very breath of life to diphtheria. It loves broken drains, untrapped waste pipes, unventilated soil pipes, manure heaps and foul sewers. It delights in a habitation built on a site filled in with street cleanings. Basements flooded with sewage charms the fiend. The smell of rotten vegetables in the cellar it construes into an invitation to call and make itself at home. Excrement, sodden soil and polluted drinking water make it happy.

2. Diphtheria is contagious and infectious. Food tasted by the sick, the air of an unventilated chamber, drinking cups, towels, pocket handkerchiefs, anything

that will convey the subtile poison from the diseased mucous membrane of persons in the vicinity, will communicate the distemper. Many a child is killed with a diphtheria kiss.

3. As a rule, people will have small-pox, scarlet fever, measles, and many other infectious diseases but once. Diphtheria is an outlaw, and repeats itself as often as it gets a chance.

4. Nursing children and old people are not apt to have diphtheria, but may have it. Mature women take their nurslings with them to see a diphtheria patient or corpse, and are ready to swear that the disease is not "catching" because neither they nor their babes have been affected.

5. So-called membranous croup, except where traumatic, is indentical with diphtheria. Some doctors still call diphtheria "membranous croup," when it affects the larynx and trachea, and is not visible in the throat. Terrible mischief may be done when the wrong name leads to the supposition that the disease is not contagious. Death frequently steps in to break the dangerous obstinacy of practitioners and people on this point.

6. Sore throats are as dangerous as Egyptian sore eyes. They may contain a contagious diphtheritic element, especially when diphtheria is epidemic. Some physicians tell the people that all cases of real diphtheria terminate in death. The inference is that cases which get well are not diphtheria at all. Such physicians are fools or knaves; fools if they don't know any better; knaves if they are attempting to disarm precaution for the purpose of increasing trade. The mortality of diphtheria averages about forty per cent., the same as that of small-pox.

7. Diphtheria, which is now the most continually murderous contagious disease afflicting the civilized portions of mankind, can not be eradicated till communities and people eliminate filth, or in other words, till all organic wastes are removed from inhabited places before the process of putrefaction evolves the gases that feed it. Isolation and disinfection can materially check its career, but can not entirely stop it, while cess-pools, vaults, polluted drains, foul sewers, and areas of soil contaminated with stagnant water and animal excreta, continue to distill their poisons into the air which we breathe and into the water which we drink.

People sometimes ask why, if these things are so, diphtheria prevails in the open country not less than in cities. It flourishes in the country for the simple reason that the drinking water of the farm house is often furnished by the well into which sweeps the drainage of a foul vault or rotten barn-yard, and the inmates of the farm house breathe air reeking with putrescent slops ponded about the kitchen door. The habitations of the country, as a rule, are in worse sanitary condition than those of cities."

Diphtheria being such a virulent disease, easily communicated both by contagion and infection, every case should be strictly quarantined, let the case be ever so mild.

As the eminations from the body of a person who has died with the disease are highly poisonous and dangerous, the funeral, under all circumstances, should be strictly private, and a public one should never be tolerated.

ROUX AND SERSIN—THE MICROBE AND THE POISON OF DIPHTHERIA.

(Gaz. Med., January 12, 1889. From the Archives of Pediatrics.)

The result of the investigation of these authors appeared originally in the Annales de l'Institut, Pastuer, December 25, 1888, and lead one to hope for a more effective action of the means of treatment of this deadly and rebellious disease. The experimental studies of Klebs, Loeffler, G. Hoffmann and others, upon the bacillus of diphtheria are reviewed, and the existence of the microbe described by Klebs is confirmed. They have also brought forward a fact for the establishment of its specific character which other experimenters have not observed, namely, that diphtheria paralysis may be produced by inoculations of cultures of the bacillus into the pharynx and trachea, or by injections into the veins. The disease which has been produced by them in animals upon which they have performed this experiment is in all respects identical with the diphtheria of human beings. But this is not all, for the authors, being convinced that the bacillus of Klebs acts upon animals who have succumbed to the diphtheritic infection only in the area of the false membranes, or at the point of inoculation, and not in the organs, have concluded that the effect of the bacillus is due to the poison which it secretes, and have sought for that poison in culture media. Their method of investigation was as follows: They filtered upon porcelain a culture in real broth; after it had remained seven days in an oven no change occurred; and, when alkaline bouillon was added, still no culture could be obtained. When it was introduced in quantities of two or four cubic centimetres under the skin of animals it did not make them sick. But this was not the case when much larger quantities were used; when, for example, thirty-five cubic centimetres were injected into the peritoneal cavity of the guinea-pig, or into the veins of a rabbit.

Immediately after such an operation a guinea-pig appeared well enough, but after two or three days his hair became roughened, his appetite failed, a bloody discharge flowed from the urethra, the animal became weaker and weaker, and finally died, on the fifth or sixth day after the injection. An autopsy showed congestion of the axillary and inguinal glands, dilatation of all the vessels, and especially those of the kidneys and supra-renal capsules; the urine was bloody, there were ecchymoses along the course of the vessels, and the pleurae contained serous exudate. The intensity and the rapidity of action of the poision depended upon the quantity which was contained in the culture. If the effects of injections of cultures deprived of microbes were compared with that of innoculations of a fresh culture of Klebs's bacillus, the symptoms and lesions, it was found, were identical. Animals, such as rats and mice, which were refractory to the bacillus, were equally refractory to the diphtheritic poison. The question is asked whether this poison is an alkaloid or a diastase. The diminution of its activity under the influence of air and heat tends to lead one to adopt the second hypothesis, and the question arises whether, with the poison thus attenuated, one can obtain, in animals, first, habituation to it, and then immunity from diphtheria. This great end is the object of new researches on the part of Roux and Sersin. They have discovered an important practical fact, which is that the microbe of diphtheria will only develop upon a mucous membrane which is already diseased. Hence the necessity in all cases of angina in children, even in the most benign of them, to keep the mouth and pharynx well irrigated with carbolic acid solution, carbolic acid being the antiseptic which is most potent against diphtheria. It is possible that the bacillus of Klebs, as an observation of Loeffler would tend to demonstrate, exists normally in the mouth and remains inoffensive as long as the mucous membrane is healthy. Another point which may be deduced from the author's work is the following: If the bacillus of Klebs will only develop and proliferate in the area covered by false membrane, general infection, due to the poison which is secreted by the bacillus, must always be secondary, and therefore can and ought to be prevented by local antiseptic treatment, sufficiently energetic in character, directed to the part which is invaded by false membrane. In this connection it is noted that the local treatment of diphtheritic angina is coming more and more into favor among clinicians.

A. F. C.

ACUTE LUNG DISEASES.

The reported mortally from this class of diseases within the year is as follows:

Bronchitis	277
Congestion of the lungs	114
Influenza	1
Pleurisy	14
Pneumonitis	1,072
Broncho-pneumonia	11
Catarrhal-pneumonia	16
Pleuro-pneumonia	19
Typho-pneumonia	48
Total	1,572

Of this number 672, or 42.77 per cent. occurred in the months of February, March and April.

These figures lead us to the conclusion that the people, with the coming of mild weather become careless, and unnecessarily expose themselves. In this climate, during the months attended with the greatest fatality, the weather is very changeable. When a mild day comes many persons will lay off their overcoats, mufflers and overshoes, which they have been accustomed to wearing, and the result is a large number of them pay the penalty in sickness and death from these diseases. If the people could be educated to take the proper care of themselves at this season of the year, the sickness and mortality from this class of diseases would be greatly lessened.

MALARIAL FEVERS.

In this class we have placed bilious fever, congestive chill, catarrhal, congestive, intermittent, remittent, and malarial fevers.

The total number of deaths reported as being caused by these within the year is 116, the greatest number of which occurred during the months of August, September and October.

The vital statistics collected during the eight years' existence of this Board shows that the number of deaths from this class of febrile disturbances is gradually growing less. Undoubtedly the cause of this is due to the improved drainage and cultivation of our land and the improved sanitary condition of our town, and cities.

SCARLET FEVER.

The total number of deaths reported within the year from this disease is 126, a decrease of 36, when compared with the previous year. It is to be earnestly hoped that the people, and some individuals that are engaged in the practice of medicine, will some day be sufficiently educated (especially the latter class) to know that scarlet fever, scarlatina, scarlet and canker rash, are different names for the same disease, and the mildest case is capable of communicating the disease in its severest form. Scarlet fever is the only name that should be used, for so many names only tend to confusion.

Under the head of zymotic diseases we have discussed quite fully of the cause, prevention and spread of this and other communicable diseases. In this connection we wish to say that the people understand that the spread of this disease can be prevented by the observance of proper precautions, such as isolation, proper care, and the judicious use of disinfectants.

TYPHOID FEVER.

Within the year there were 808 deaths reported from this disease; compared with the preceding year, shows a decrease of 70; 439 were males and 369 were females; 337 or 41.70 per cent. died in the prime of life, between the ages of twenty and forty. Typhoid fever is a self-limited, specific, infectious, zymotic disease, with its own peculiar micro-organism contained in the discharges of the sick, which, if introduced into a susceptible healthy body, will produce the disease.

The condition of the system will have an important influence upon the germs when they gain access to the body. It is said that many who receive these germs either escape the disease entirely, or " all persons receiving typhoid germs may be actually infected, but in so small a degree that they are unconscious or but feebly conscious of anything amiss." These germs gain entrance to our bodies by air, food and water. " When the stools of a typhoid fever patient (in which the germs are present in countless numbers), are thrown on the ground they become dried," and these germs, being taken up by the prevailing winds, are carried long distances. Inhaled with the air we breathe, they may lodge in some convenient place to be swallowed. Drinking water to which these germs has gained entrance becomes the most frequent source by which they gain access to our systems.

While unsanitary conditions are important factors in the development of this and other specific diseases, but few claim that they are caused by such conditions. J. L. Kaine, M. D., of Milwaukee, in an article on Recent Progress in Preventive Medicine, says: "The march of typhoid fever germs has been traced a thousand times with as much certainty as the route of Sherman's March to the Sea might have been followed.

A case of typhoid fever occurs in a town that has been free from it for years; the sanitary conditions are no worse than they have been for years, yet the disease spreads. The sewage is poured into a stream; a town twenty miles below uses the water of this stream for domestic purposes, and soon typhoid fever develops in this second town. Tell these people that the use of this water is responsible for this epidemic, and they reply that they have used it for years with impunity.

There are towns in this country where typhoid fever has raged with frightful fatality, and the disease has been stayed only by a complete revolution in the matter of cess pools and water supply, although years had elapsed during which cess pools and water were harmless."

Not only is the water supplied by the water works systems of cities and towns polluted as above stated, but the water in public and private wells become impregnated with disease germs by seepage from defective drains and sewers.

The water in private wells is frequently contaminated by drainage from cess pools, privy vaults and waste from infected houses thrown in close proximity to them. A well has been described as drawing its supply from an "inverted cone, having its apex at the bottom of the well and its base at the surface of the ground. In dry seasons this base is often extended until the well becomes a receptacle for the more or less perfectly filtered filth from all the sources found in the average back yard, and the water, often sparkling in its apparent purity, becomes a culture fluid for any disease germs finding their way into it."

The great Plymouth epidemic of typhoid fever in Pennsylvania a few years ago which caused the sickness of 1,104 persons, and the death of 114, and the expenditure of $67,100.17, was traced to the use of water that had been polluted by the fecal matter from one imported case.

The disease can also be produced by using milk or other articles of food or drink from cans, vessels or dishes which have been washed in polluted water.

Typhoid fever is everywhere recognized by sanitarians as one of the most preventable of all diseases. To prevent it the most effective means that can be employed are those that will destroy all the excretions of every one of the cases. The discharges from the bowels of typhoid fever patients should be thoroughly disinfected before being disposed of. The best disinfectants for this purpose are chloride of lime and corrosive sublimate. A solution of either can be made as follows: Eight ounces of chloride of lime to a gallon of water, or two drachms of corrosive sublimate to a gallon of water. A quart of either solution should be used for each discharge from the bowels and allowed to stand for an hour before being emptied. All clothing connected with the sick should be disinfected by the use of one of these solutions or by boiling.

The use of all suspected water should be avoided, and where this can not be done it should be boiled before being used for drinking purposes.

THE BACILLUS OF TETANUS.

BY DR. S. KITOSATO.

(Translated for the weekly abstract issued by the Supervising Surgeon General of the United States Marine Hospital Service, from LaPratque Medicale, Paris.)

CONCLUSIONS.

1. Tetanus is an infectious disease caused by a specific bacillus.
2. The exciting cause of tetanus in man, and of tetanus, when inoculated, in some bacillus which is identical with the "anaerobic bacillus" first described by Nicolaier, and later confirmed by Rosenbach and others.
3. This bacillus appears both in the wound-pus of tetanic persons and of inoculated animals. It frequently produces spores in the pus, but if the pus is examined early it may often be seen as a small rod free from spores.
4. Pure cultures of these bacilli can be made from the pus of tetanic patients and animals, and inoculations from these cultures will produce tetanic symptoms in other animals.

5. The former statements, apparently contradictory, concerning the etiology of tetanus, and particularly regarding the appearance of the bacteria, are made clear by the fact that the investigations were made at different stages of the disease. The sooner patients or animals die the less likely are spores to be found in the pus. But the bacilli themselves are never wanting, and spore forming tetanus bacilli can always be artificially cultivated from tetanic pus that is free from spores.

PROPHYLAXIS AGAINST TUBERCULOSIS.

(Translated for the weekly abstract issued by the Supervising Surgeon General of the U. S. Marine Service, from La Pratique Medicale, Paris.)

In the name of a commission composed of Messrs. Verneuil, Germain, See, Dujardin-Beaumetz, Cornil and Villemin, Reporter, the latter read a report on the prophylaxis of tuberculosis, a report which terminates with the following conclusions:

I. Tuberculosis is, of all diseases, that which numbers most victims. In the large cities it counts for one-fourth to one-seventh in the mortality. To explain this high rate it must be borne in mind that pulmonary phthisis is not the only manifestation of tuberculosis, as the public wrongly believe. Indeed, in numbers of cases, bronchitis, pleurisy, meningitis, peritonitis, enteritis, osseous and articulary lesions, cold abscesses, etc., are maladies of the same nature.

II. Tuberculosis is an infectious, parasitic disease, caused by a microbe, but it is transmissible to a healthy individual by an ill subject only under special conditions, which we will proceed to determine. Independently of direct hereditary transmission, the microbe of tuberculosis penetrates into the organism by the ærial passages with the air we breathe, by digestive canal with food, by the skin and the mucous membranes, by excoriations, pricks, wounds, and diverse ulcerations.

III. The most frequent source of contagion, and the most to be dreaded, is the spittle of consumptive patients. Almost inoffensive while it is in a liquid state, it is when reduced to powder that it becomes dangerous. It quickly takes this form when projected on the soil, on floors, pavements, walls; when it sullies clothing, bedding, blankets, carpets, curtains; when received into handkerchiefs, napkins, etc. It is then, that, dry and pulverulent, it is set in motion by sweeping and dusting, by beating and brushing stuffs, furniture, blankets, clothing. This dust, suspended in the air, penetrates the respiratory channels, is deposited on cutaneous and mucous surfaces deprived of their epidermic varnish, on utensils used in the preparation of food, and thus becomes a permanent menace to persons living in an atmosphere thus contaminated. The contagious principle of tuberculosis is contained, also, in the dejections of the consumptive, whether it comes from the intestinal lesions so frequent in this disease, or from the spittle swallowed by the patients. Very frequently these latter are attacked by diarrhea, soil their bed-clothing and linen, and thus create a source of infection against which it is necessary to guard. Consequently, it is necessary:

1. To be thoroughly convinced of the necessity for the greatest precaution with regard to the substance in the expectoration of consumptives. It should always and everywhere be received into spittoons containing a certain quantity of liquid, and not pulverulent material, such as sand, bran and ashes. These should be emptied every day into the fire and cleansed with boiling water. They should never be emptied on muck piles, nor into courts or gardens, where they might

tuberculorize the poultry eating there. The use of spittoons should not be confined to hospitals and private houses, but the adoption of them in all public buildings, barracks, workshops, depots, and all other places of meeting, is indispensable.

2. Not to allow linens soiled by dejections of tuberculous persons to dry, but to soak it in boiling water before sending it to the wash, or else to burn it.

3. To avoid sleeping in the bed of a tuberculous person, and to occupy the same room as little as possible if minute precautions have not been taken against his spittle and the soil of linen by his dejections.

4. To have rooms in hotels, furnished houses, cottages, villas, etc., occupied by consumptives at seaside and winter resorts furnished and carpeted and curtained in such a manner that disinfection may be readily and thoroughly performed after the departure of each invalid. The public is the first to prefer dwellings in which such hygienic precautions are observed.

5. Not to make use of articles contaminated by tuberculous persons (linen, bed clothes, clothing, toilet articles, hangings, furniture, toys), except after preliminary disinfection by steam under pressure ebullition, sulphur vapor, and coating with lime.

IV. If the spittle of consumptives and their alvine secretions are the most frequent origin of acquired tuberculosis, they are not the sole origin. The parasite of the disease may be found in milk, in the meat and blood of diseased animals which serve as food for men (beef, especially of the cow, hare, poultry, etc.).

1. Milk, of the supply of which the least is generally known, should especially receive the attention of mothers and nurses, because of the aptitude of children to contract tuberculosis. (In Paris there die annually 2,000 tuberculous persons aged less than two years). The tuberculous mother should not nurse her infant; she should confide it to a healthy nurse living in the country, in a house in which there are no consumptive persons, where, with the best hygienic conditions, the risks of tuberculous contagion are much less than in cities. Breast nourishment being unattainable, if it is replaced by cow's milk, this should always be boiled. Asses' milk and goat milk, unboiled, present infinitely less danger.

2. The meat of tuberculous animals should be prohibited. The public has every interest in seeing that the inspection of meat, required by law, should be rigorously exercised.

3. The practice of drinking blood at the slaughter house is dangerous. It is also inefficacious.

V. All individuals have not the same degree of aptitude for contracting tuberculosis. There are subjects especially predisposed to it who should redouble precautions to avoid circumstances favorable to contamination which we have pointed out above. These are:

1. Persons born of tuberculous parents or belonging to families which number many members attacked by tuberculosis.

2. Those who are debilitated by privations or excesses. The abuse of alcoholic liquors is particularly disastrous.

3. Individuals attacked by, or convalescing measles, scarlet fever, small pox, and above all, diabetes, are also predisposed to tuberculosis.

THE PREVENTION OF CONSUMPTION.

(Annals of Hygiene, May, 1889.)

Although consumption is no longer regarded as a malady with a necessarily fatal prognosis, its mortality remains a deplorably high one. It is quite consonant with modern ideas of prevention, and sanitation to search for practicable means of preverting the further spread of this destroyer of mankind, rather than do battle for those already doomed.

This aspect of the subject was prominently brought forward at a recent meeting of the London Epidemiological Society, in a communication made by Dr. J. E. Squire. The author held that a review of the conditions on which consumption depends, shows that (The Lancet) some of the most essential come well within the scope of preventive medicine. The discovery of the bacillus tuberculosis allows us to place consumption in close relation to the class of infectious diseases toward the control of which preventive medicine has already done so much; and experiments have abundantly proved that tubercular disease can be communicated from affected animals to the healthy. That consumption can be communicated from person to person, has long been a matter of popular belief, and cases were referred to which seem to prove that such is actually the fact. The dependence of consumption upon the infective bacillus has been shown by numerous experiments. Consumption then depends primarily upon the reception into the body of an infective particle or micro-organism; but a lowered vitality of the tissues places them in a more favorable condition for the development of the bacillus, and thus constitutes in the individual a predisposition to the disease.

Dr. Squire further stated that the bacillus may enter the body: 1. By inoculation through a cut or scratch. 2. By means of the genito-urinary mucous membrane. 3. By the product of conception, and by direct hereditary transmission. 4. By the mucous membrane of the respiratory tract, and by the air-cells of the lungs. The possibility of infection through the alimentary tract assumes importance from the prevalance of consumption in animals which are used as food, and from the experimental proof of the infectiousness of the milk of tuberculous cows.

The present state of knowledge on the subject points very strongly to the necessity for careful inspection of cattle kept for dairy purposes, and for precautions in using the milk, and possibly, also the flesh of diseased animals.

It was also pointed out that since infection through the respiratory system is more potent, and probably more frequent, than by any other means, and as the risk of infection is intensified by close contact, and by the crowding together of sick and healthy, the necessity for free ventilation is apparent, and becomes more so when the predisposing causes are considered. The latter were considered under these headings: 1. Hereditary predisposition. 2. Influence of air and sunlight. 3. Age and sex. 4. Effect of certain occupations. 5. Influence of locality and habitation, which includes the consideration of climate and temperature, altitude, nature of the soil, density of population, and the condition of dwelling houses both as regards their construction and the over-crowding of the inmates. 6. Influence of certain diseases, local and general.

In-door and sedentary occupations, as well as those in which much dust is inhaled, are known to influence largely the prevalence of consumption. Much of this among the persons following such occupations is preventable. Here, again, the basis of all preventable measures is found in efficient ventilation. The homeworkers, *i. e.*, among tailors, are more difficult to deal with than the factory hands; but public work-rooms, in which men could find convenience for their work, might lessen the evils of the present state of things.

With regard to climate, its influence on the causation of consumption is probably infinitesimal as compared with the effect of density of population. Overcrowding is of two kinds: The aggregation of buildings on a confined area, with insufficient open space around and between houses, and the crowding together of persons within the houses.

The author thinks the laws should be enforced regulating the width of streets, the amount of open space around houses, the minimum height of rooms and size of windows, and efficient inspection of new houses should be carried out before they are allowed to be occupied. Tenement houses might be licensed to hold a certain number of inmates, and be liable to inspection. As many diseases which produce a general debility thereby predispose to consumption, general and sanitary and hygienic measures framed for the control of these tend to diminish the amount of consumption in a community, and seeing that insufficiency of food, of fresh air, and of exercise, continued anxiety and mental depression, and dissipation must be included among the predisposing causes, the philanthropist may assist the sanitarian in the fight against this widespread disease.

Finally, Dr. Squire believes that the fundamental principles which must form the basis of any successful attempts to diminish the prevalence of consumption are, (1) to provide a sufficiency of fresh air in and around dwellings and work-places, and (2) to endeavor to improve the resisting power of the individual by physical training during the period of growth and development, and by exercise and recreation, alternating with the work of maturer age. As the effects of consumption in the individual are not confined to a single generation, but are handed down by hereditary transmission from parent to child, any cause which tends to increase tubercular disease among the adult members of a population must be regarded as tending to produce a progressive deterioration of race. It is, therefore, to the interest of the community to allow no time to be lost in commencing a systematic attack against the preventable causes of consumption.

Dr. Squire states his conclusions rather broadly, and his recommendations are lacking in detailed directions for the prevention of the spread of consumption as it now thrives. A painstaking disinfection of all suspected matters is certainly not to be overlooked, and will in time, accomplish much good. Of course all measures of intelligent sanitation tend to diminish preventable diseases, and if consumption is to be regarded in this light it can not escape its share of suppression. *A priori*, there is apparently no reason why man should not eventually remain the victor in the great struggle between animal and plant life. But before the sanitary millennium arrives many a poor victim will be put to rest, beaten in the battle of human protoplasm against microbic supremacy.

PREVENTION OF CONSUMPTION.

ACTION OF THE HEALTH DEPARTMENT OF THE CITY OF NEW YORK.

[Sanitarian for July, 1889.]

Drs. Herman H. Biggs, J. M. Prudden and Henry P. Loomis, Pathologists of the Board of Health of New York, who were requested to formulate a brief and comprehensive statement regarding the nature and prevention of tuberculosis, have made their report as follows:

The disease known as tuberculosis, and when effecting the lungs as pulmonary tuberculosis (consumption), is very common in the human being and in certain of the domestic animals, especially cattle. About one-quarter of all the deaths occurring in the human being during adult life is caused by it, and nearly one-half of the entire population at some time in life acquires it. The disease is the same in nature, in animals and in man, and has the same cause.

It has been proven beyond a doubt that a living germ called the "tubercle bacillus" is the cause and the only cause of tuberculosis. Tuberculosis may affect any organ of the body, but most frequently first involves the lungs. When the living germs find their way into the body they multiply there, if favorable conditions for their growth exist, and produce small growths or nodules (tubercles), which tend to soften. The discharges from the softened tubercles, containing the living germs, are thrown off from the body. In pulmonary tubercles the discharges constitute, in part, the expectoration. The germs thus thrown off do not grow, outside the living human or animal body, except under artificial conditions, although they may retain their vitality and virulence for long periods of time, even when thoroughly dried. As tuberculosis can only result from the action of these germs, it follows from what has been said that when the disease is acquired it must result from receiving into the body the living germs that have come from some other human being or animal affected with the disease. It has been abundantly established that the disease may be transmitted by meat or milk from the tubercular animal. The milk glands in the milk cows often become affected with the disease when their lungs are involved, and the milk from such animals may contain the living germs, and is capable of producing the disease. Among stall-fed dairy cows twenty or thirty per cent. are sometimes found to be affected with the disease. Tubercular animals are also frequently killed for food. Their flesh sometimes contains the germs, and if not thoroughly cooked, is capable of transmitting the disease. Boiling the milk and thoroughly cooking the meat destroys the germs. Although the meat and milk from tubercular animals constitute actual and important sources of danger, the disease is acquired, as a rule, through the communication from man to man.

Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected) by breathing air in which the living germs are suspended as dust. The material which is coughed up, sometimes in large quantities, by persons suffering from consumption contains these germs, often in enormous numbers. This material, when expectorated, frequently lodges in places where it afterward dries, as on the streets, floors, carpets, clothing, handkerchiefs, etc. After drying, in one way or another, it is very apt to become pulverized and float in the air as dust.

It has been shown experimentally that dust collected from the most varied points, in hospital wards, asylums, prisons, private houses, etc., where consumptive patients are present, is capable of producing tuberculosis in animals when used for inoculation. Such dust may retain for weeks its power of producing the disease. On the other hand, dust collected from rooms in institutions or houses that have not been occupied by tubercular patients, does not produce the disease when used for the inoculation of animals.

These observations show that where there are cases of pulmonary tuberculosis under ordinary conditions, the dust surrounding them often contain the "tubercle bacilli," and persons inhaling the air in which this dust is suspended may be taking in the living germs. It should, however, be distinctly understood that the moist sputum received in proper cups are not elements of danger, but only the dried and pulverized sputum. The breath and moist sputum are free from danger because the germs are not dislodged from moist surfaces by currents of air. If all discharges were destroyed at the time of exit from the body, the greatest danger of communication from man to man would be removed.

It then follows that tuberculosis is a distinctly preventable disease. It is a well-known fact that some persons, and especially the members of certain families, are particularly liable to tuberculosis, and this liability can be transmitted from parent to children. So marked and so frequent is this liability, and so frequent is the development of the disease in particular families, that the affection has long been considered hereditary. We now know that tuberculosis can only be caused by the entrance of the germ into the body, and that this transmitted liability simply renders the individual a more easy prey to the living germs when once they have gained entrance.

The frequent occurrence of several cases of pulmonary tuberculosis in a family, is then to be explained, not on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission directly from some affected individual.

When the parents are affected with tuberculosis the children from the earliest moments of life are exposed to the disease under the most favorable conditions for its transmission, for not only is the dust of the house liable to contain the bacilli, but the relationship also between parents and children, especially between the mother and child, are of that close and intimate nature especially favorable for the transmission by direct contact.

If, then, tuberculosis is not inherited the question of prevention resolves itsel principally into the avoidance of tubercular meat and milk and the destruction of the discharges, especially the sputum of tubercular individuals. As to the first means of communication those measures of prevention alone answer the requirements which embrace the governmental inspection of dairy cows and of animals slaughtered for food, and the rigid exclusion and destruction of all those found to be tubercular.

For the removal of the second means of cummunication, *i. e.*, the sputum of tubercular individuals, the problem is simple when the patients are confined to their rooms or houses; then wooden or pasteboard cups with covers should always be on hand for the reception of the sputum. These cups are supported in simple racks, and at least once daily, or more frequently if necessary, should be removed from the racks and thrown with their contents into the fire. (A cheap and efficient cup answering this purpose is now on the market, and is supplied by the druggist.)

The disposition of the expectoration of persons who are not confined to their rooms or houses is a far more difficult problem.

The expectoration certainly should not be discharged on the street, and the only practical means for its collection seems to be in the handkerchiefs, which, when soiled, should at the earliest possible moment be soaked in a solution of 5 per cent. of carbolic acid and then boiled or washed.

Handkerchiefs thus soiled are exceedingly dangerous factors in distributing tubercle bacilli, for when the sputum dry it is separated from the cloth, and then soon becomes pulverized and suspended as dust. It becomes evident from what has been said that the means which will most certainly prevent the spread of this disease from one individual to another are those of scrupulous cleanliness regarding the sputum. These means lie largely within the power of the affected individual. It is furthermore to be remembered that consumption is not always, as was formerly supposed, a fatal disease, but it is in very many cases a distinctly curable affection. An individual who is well on the road to recovery may, if he does not with the greatest care destroy his sputum, diminish greatly his chances of recovery by self-inoculation.

While the greatest danger of the spread of this disease from the sick to well is in private houses and in hospitals, yet, if this danger is thoroughly appreciated, it is for the most part quite under control, through the immediate destruction of the sputum and the enforcement of habits of cleanliness. But in places of public assembly, such as churches and theaters, particularly the latter, conditions are different and the safety would seem to depend largely upon a dilution and partial removal of the floating and possibly dangerous dust by means of adequate ventilation.

Rooms in private houses and hospital wards that are occupied by phthisical patients should from time to time be thoroughly cleaned and disinfected, and this should always be done after they are vacated, before they are again occupied by other individuals. Steamship companies should be obliged to furnish separate apartments for consumptive persons, so that no person in the exigencies of travel need be forced to share his room with one who might be a source of active danger to him.

We desire to especially emphasize the following facts:

1. That tuberculosis is a distinctly preventable disease.
2. That it is not directly inherited, and
3. That it is acquired by the direct transmission of the tubercle bacillus rom the sick to the healthy, usually by means of the dried and pulverized putum floating as dust in the air.

The measures, then, which are suggested for the prevention of the spread of tuberculosis are:

1. The security of the public against tubercular meat and milk, attained by a system of rigid official inspection of cattle.
2. The dissemination among the people of the knowledge that every tubercular person may be a source of actual danger to his associates, if the discharges from his lungs are not immediately destroyed or rendered harmless; and
3. The careful disinfection of rooms and hospital walls that are occupied or have been by phthisical patients.

BUTCHERS' MEAT THE CHIEF CAUSE OF CONSUMPTION—DISEASES FROM ANIMALS AND ANIMAL FOOD—ACTINOMYCOSIS—THE PTOMAINES.*

BY WM. B. CLARKE, M. D., INDIANAPOLIS, IND.,
Secretary State Homœopathic Medical Society.

> Filled is life's goblet to the brim ;
> And though my eyes with tears are dim,
> I see its sparkling bubbles swim,
> And chant a melancholy hymn,
> With solemn voice and slow.
> —*Longfellow.*

The Indianapolis Sunday Sentinel of October 20, 1889, published an article headed "How Hebrews Butcher," which treated of the local dressed-meat industry, described the scenes witnessed during a visit to the slaughter-houses, and spoke of the work of the meat inspector, and in which I find the following interesting paragraph—one well calculated to furnish food for thought to all who read it:

> At the various slaughter houses beeves were found that exhibited in the flesh black spots about the size of a lead pencil end. These appear on nearly all parts of the body, but more frequently near the first ribs. Meat Inspector Fohl thinks these specks contain tuberculosis microbes, that may be communicated to the human system. The City Board of Health chemist is of the same opinion, and has been making a thorough analysis of the matters they contain. He has not yet completed his examination. If he is warranted in his belief, a good many cases of lung disease could probably be traced to this source.

And in another column was an important article showing how diphtheria is propagated in poultry and by them communicated to man, the authority cited being the opinion of the great French investigator, Pasteur, who has repeatedly verified the fact, reinforced by confirmatory interviews with the County Coroner and several city physicians.

These were valuable articles, based on a subject that is now engrossing the attention of the best minds of the entire medical world—the diseases we contract from animals or animal products—and the first part of this paper is mainly compiled from one drawn out by them and published by me in the same paper on the following Sunday.

The head to the above alluded to dressed-meat article, "How Hebrews Butcher," was hardly appropriate, as the only allusion to the Jewish methods of procedure was in these few words: "Their butcher selects the animal, which must be perfectly clean, and then rips a keen-edged knife across its jugular vein." (Later on I shall take occasion to more fully describe the Jewish methods of precaution.) As to the black specks spoken of in the above extract, I suspect, in the absence of knowledge as to the actual condition of the lungs of the animal when slaughtered, that they were simply extravasations or centers of inflammation set up by the brutal beatings the animals had received during life, by the "hornings" of other cattle, or the bruises received during transportation. But it is a fact that consumption is not local, not confined to the lungs, and that all parts are poisonous if used as food, the milk as well as the flesh.

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*Compiled mainly from the author's popular articles in the Indianapolis *Journal, Sentinel* and *Sun.*

As I have just intimated, this broad subject is being closely studied throughout the world, and not by impractical alarmists either, but by men well sifted in perilous enterprises, and the sooner this country, this State and every community in it wake up to the real condition of things the better our health will be. England has a meat-inspection system far more intricate and effective than anything we have, yet Dr. Behrend, of London, says that only half the 26,000 beeves slaughtered annually there for the Hebrew trade come up to the Jewish sanitary requirements, and his moral to this tale is that he never saw a case of consumption among Jews in his thirty years' busy practice, as I shall further elucidate. An eminent English sanitarian says that the stomachs of the English people serve as catacombs for 20,000 diseased animals every year; and another (Dr. T. K. Chambers, London,) says that tons of diseased, decayed and purulent meat find refuge in that haven for bad meat—the sausage factory. As I have just said, English regulations are very strict, compared with ours; yet, for all this, sanitarians are far from satisfied there, as this, on meat inspection, from the *British Medical Journal*, June 15, 1889, will show: "The whole subject has a most important bearing on public health. It is one that must be taken in hand by sanitary legislators, and the sooner it is tackled thoroughly and on the broadest possible basis the sooner shall we obtain a cleaner bill of health under the heading tuberculosis." And I may add, other diseases. Without inspection we would be flooded with diseased meat, and we are as it is, perhaps not locally, but generally, through ignorance or design. A writer in our own *Good Health* says:

> The work of the cattle inspectors in this country is scarcely more than a farce. He does not count the pulse nor take the temperature of the animal, nor make microscopical examination of its flesh. A friend who has looked into the matter in Chicago wrote with regard to the inspection of the hogs that if a hog is able to walk up the gangway to be slaughtered it is a healthy hog. If it falls down within a few feet of the top its carcass is sent across the city to a rendering establishment and made into steam-refined lard or oleomargarine butter.

Henry Behrend, a noted Hebrew physician and scientist of London, has recently contributed a powerful article on this subject to the Nineteenth Century (the September number). He shows that consumption causes one-fifth of all the deaths in England, one-fourth of all the deaths in Paris, and one-seventh to one-eighth of all the deaths in the United States. He clearly establishes the identity or similarity of bovine and human tuberculosis, and the capability of its transmission from animal to animal and from animal to man, and points out that it is well-nigh impossible to detect the disease in animals unless near its last stage, death, and often not even then. Excellent as are the English laws, he says that "inspection at present is utterly inadequate, and the adoption of more stringent measures for the regulation of the sale of the flesh of animals is imperative." He says that in Hanover in one month 8,000 pounds of meat was condemned as tuberculous, and states that an inspector in a London meat market had declared, under oath, that thirty per cent. of London meat was tuberculous, probably a gross exaggeration on the part of the inspector, but possibly his belief. Dr. Behrend then says that of 13,116 beeves slaughtered for the Hebrew trade in London in six months only 6,973 came up to the peculiar Jewish requirements and that the average rejections in five years had been forty per cent. But these rejections are often considered good enough for the Gentiles in a trade way. As a moral to adorn this tale he makes the astounding statement that in a large practice of over thirty years he has never met a case of consumption among the members of the Jewish faith! And he fortifies that statement with similar ones from other busy physicians! What a revelation this is! Shall we conclude that to be a Jew is to be impervious to consumption, that scourge of the civilized world? Shall we not rather play the part of wisdom by adopting some of his hygienic and sanitary precautions, in the hope that we, too, may come within the pale of similar immunity?

In Dr. Foote's "Bacteria" is shown how it is that some animals and persons take certain diseases, while some can not be made to take them, but will take others, and he throws out the following hint regarding consumption, and one probably distasteful to real prohibitionists: "Clinical experience has shown that many cases of consumption have been delayed, or may be kept wholly in abeyance for years, by the judicious use of alcoholic liquors." Alcohol probably does this by killing or neutralizing the germs of disease introduced, but how much the better way it would be not to be introduced to the germs!

That rich but little-worked mine of hygienic truth, the Jewish Talmud, that veritable store house of valuable hints in sanitary science, must now be entered for original information on this meat-inspection subject, being, as it is, the authoritative exposition of the Hebrew laws and traditions. What an ancient work part of the Talmud is! The great physician, Hippocrates, was born 460 B. C., and all history of medicine, other than mythological, is lost at the point 600 B. C., far beyond which (at a definite date which I defy any one to name), came Æsculapius, the founder of Greek medicine, who styled himself the God of Medicine, and Hygeia, his daughter, was called the Goddess of Health. Yet hundreds of years before all these lived nations whose literature was preserved by the Jews, even though the great library of Alexandria was destroyed by fire, and out of this literature the Talmud has grown. Hippocrates' writings show him to have been familiar with it. The Talmud (which means teaching) is, for the greater part, a treatise for preserving health, its principal subjects embracing religion, philosophy, medicine, law, history and practical duty. (I have been thus explicit in this paragraph that those really interested in the subject may pursue it at their leisure through the proper channels of information. An excellent compilation of these Talmudic facts is an article by Dr. Von Klein, of Dayton, Ohio, in the 1884 transactions of the American Medical Association, and which I have liberally drawn on at this time).

Kosher meat, as the passed-inspection Hebrew meat is called, is thus prepared, under the supervision of the proper official, often the rabbi himself, certainly one familiar with pathological appearances: A perfectly sound and presumably healthy animal is selected and thrown, and a keen, sword-like knife, three feet long, is pushed once across the throat and then drawn forcibly back toward the operator, the animal then being hung up by the heels until thoroughly drained of blood. That oft-quoted jugular vein is, of course, severed, and so are the large arteries, by those terrible cuts, for the knife goes to the bone. Every organ is then carefully examined for traces of disease, especial attention being paid to the lungs, which must be non-adherent to the chest or each other in any lobe, and must be fully inflated and then cut into and examined for foci of disease. The larger veins and arteries must then be dissected from the meat, for it is along them that abscesses are usually found, if found at all. If defect is found at any of these points, the meat is rejected as unsuitable for Jewish use. Poultry and fish have to pass a rigid inspection, and there are other stringent regulations regarding the treatment and cooking of even the passed-inspection food articles. I need not further particularize here, nor will I lengthen this article with easily quotable animal and meat literature, much of which is of a terrifically terrifying character, but will confine myself to the one disease spoken of, consumption, and that caused by meat and milk.

Dr. Behrend told us little that was not generally known, with the notable exception of his forcible exposition of the immunity from consumption of the adherents of the Jewish faith. In an article on "Consumption," Dr. Cogshall, of Flint, Mich, shows all the dangers consequent on using certain meat and milk. His article is a compilation of the labors of noted investigators, and was published in the Michigan Board of Health report for 1881, and could easily be reproduced in two columns of a newspaper, which should be done. And many notable articles are scattered around, a prominent one being in the Massachusetts Board of Health report for 1875, on "Our Meat Supply and Perfect Health," by Dr. Folsom, Secretary of the Board. I had occasion, in an interview in one of our city papers several months ago (*Sun*, July 4) to refer to this matter, also giving a running description of a long list of the diseases man contracts from animal food, in which I hinted that Indiana cattle were not above the suspicion of being tuberculous, and, on the authority of one of our brightest of veterinarians, I can assert it as a positive fact. He has known dairy cows to die of it, and their milk to have been brought into this city and sold but a few days before their death. We frequently hear that another "cancer-jawed" steer has been relegated to the rendering apparatus by the meat inspector, but I do not remember to have yet seen a local exposition as to whether such case was a true actinomycosis or only a simple sore produced by a brutal beating or jabbing, nor a distinct tracing made as to its final destination—whether soap-fat, suet, oleomargarine or other food product. To keep up with the times, we must all know these things, and what precautions are taken looking toward the detection of tuberculous meat. *Frank Leslie's Illustrated* boomed itself into public favor by its beneficent exposé of the swill-milk swindle, and thus saved the lives of thousands of infants. What will our local newspapers do in a similar manner along the meat line?

As the facts previously stated regarding consumption and meat have been indisputably proved such by the foremost scientists, we have now to inquire into the degree of immunity from danger we acquire by cooking our food. Comparing the Jewish immunity with ours the question seems answered. For want of space this point can not now be elaborated. Suffice it to say that Prof. Gerlach has cooked meat known to be tuberculous fifteen to thirty minutes, fed it to animals, and produced consumption in two-thirds of all those experimented on, while Prof. Bollinger, of the University of Munich, announces that tuberculous milk, even when boiled, will produce consumption.

THE USE OF PORK AS FOOD.

It may not be inappropriate to inquire into the attitude of pork toward our subject, and this was admirably pictured by the President of the Ohio State Board of Health, Dr. D. H. Beckwith, of Cleveland, in his presidential address before the Ohio State Sanitary Association, at Dayton recently—a body, as he said, "with no sectarian leanings, no hope or promise of personal gain or partisan reward; with but one aim, that of preserving health and prolonging life, which, like the slow Rubens, replies, 'I paint for posterity.'" He says that "the most careful diet and thorough breeding has failed to eliminate certain disorders which are a constant menace to the good health of pork consumers, two of which are scrofula and trichinosis." He portrays the detestation in which the hog is held by ancient historians and various nations and religions, and the Mosaic and Mohammedan prohibitions, and claims that the great and wonderful immunity of the Jews from consumption, to which I have alluded, comes by virtue of their abstinence from pork. He says that "nearly ten per cent. of the mortality of Ohio is directly traceable to scrofulous disorders." His strongest argument in proof of his claim that pork eating is the cause of consumption is his presentation of facts connected with the experiences of army life, and I will quote his words:

> The death rate from scrofulous diseases in the armies of the world is appalling. It is true that their soldiers are exposed to sudden climatic changes, long and exhaustive marches, broken rest and irregular dietary habits, but when recruited they are the finest specimens of physical manhood that their countries afford, well adapted to the vicissitudes of war. Yet statisticians tell us that the per cent. of death rate directly charged to scrofulous affections is: Prussians, 27; Austrians, 25; French, 24; Hanoverians and Belgians, 30; British, 23. During the war of the Rebellion the records of five years and two months show 5,286 deaths from consumption, while 20,403 soldiers were discharged suffering with tuberculosis, and many others who died from other diseases were found, on post-mortem examination, to have tubercles. One of the chief articles of soldiers' food in the field is *pork*, in one shape or another—*contract pork*, hastily inspected, half cured and imperfectly cooked, if cooked at all, and to its use as food rather than to the hardships of a campaign may be attributed this frightful mortality.

The committee of the French Congress for the study of tuberculosis has just reported that "more than one-fourth of the mortality of Paris is from tuberculosis in some of its forms." and as for prophylaxis it says that "meats completely cooked are alone safe," that the use of raw or underdone meats should be interdicted, and that milk should be boiled. Dr. H. C. Ernst, the eminent demonstrator of bacteriology at the Harvard Medical School, Boston, also utters a warning, after having critically examined 114 samples of milk. The New York Board of Health Committee of Pathologists, deputized to investigate the cause and prevention of tuberculosis (Drs. Biggs, Prudden and Loomis), has just reported, and utters a forcible warning regarding the inspection and use of meat. Of course no consumptive mother should attempt or be allowed to attempt to suckle her own child.

THE AMERICAN BEEF SUPPLY.

A few words on the above subject may properly find place here, it being one that comes home to the teeth and stomachs of all the people. The exports of live cattle during the last half of 1889 were nearly twice as large as for the whole of 1888, and while the present supply is rapidly diminishing, the home demand is rapidly increasing. These conditions will probably result in an advance of prices, to the advantage of cattlemen and the detriment of consumers. But I will let my old friend of the New York Times, Middy Morgan, a foremost cattle expert, talk on this subject, as she did recently in the American Agriculturist, in answer to the question, "Where shall we get better beef?"

> The evils complained of are more widespread than the public generally believe. Why are the herds of the United States in a bad condition? Why is their health doubtful? Why is poor meat salable? The herds of our country represent, in the aggregate, quantity, not quality. Their health is under suspicion, because owners are short-sighted and look for the ready profit rather than the greater but more distant gain. Poor meat is salable because the demand for it exists. The masses prefer sirloin steak and rib-roast from worn-out oxen and diseased Texas steers to flanks and chucks of healthy, corn-fed grade beeves. Why do the masses prefer to feed on meat little better than carrion? Because of their ignorance. Chucks and flanks, to be profitable, must be scientifically cooked, and American housewives are too much hurried to give a studied care to cooking. The price of good beef vexes the soul of the economical housekeeper and raises his anger against the retail butcher. In Great Britain, where tons and tons of American refrigerator beef are annually consumed in the populous districts, flanks and chucks are higher than in America, being in active demand, while sirloins and rib-roasts are cheaper, the value of the entire carcass being more equalized. The suggestion of improving pastures and breeding better beef-cattle is in itself excellent, but the field is so wide that many influences must be brought to bear on it before

more than a very gradual improvement can be looked for. Many causes work together to render the cautious buyer doubtful of the sanitary condition of our meat supply. The native grasses South and Southwest furnish the germ from which arises splenic fever. This caused the underwriters, during all of last summer, to refuse to insure American herds during ocean transit, save from three States—Ohio, Virginia and Kentucky. We believe that our flocks are, in the main, healthy, and, although the decrease of ten million in our sheep within this decade is a step backward, the quality has been much improved and good mutton and well-fatted lamb are plenty in our large markets. It would be a general blessing if local production kept pace with local demand. It would save consumers from the ill effects attendant upon fevered and bruised meats. Herds slaughtered in Western centers for Eastern markets travel thousands of miles by train; herds slaughtered in our Eastern States travel hundreds of miles by train; in neither instance is there sufficient time allowed for healthy recovery. This injures the flavor and renders much of our meat supply distasteful to the fastidious. The lover of sausage meat would have his gastronomic pleasures seriously interfered with if he knew and observed the sources from which flow his tid-bits. The consumer of these savory morsels pays well for old oxen and worn-out dairy cows. These latter sell at $7 to $12 per head and at 1 to 2¾ cents per pound. The former sell down as low as 2 cents per pound. Scrub bulls also tickle his palate, and cost the manufacturer from 1¼ to 2¾ cents per pound. Oh, happy ignorance! Oh! folly to be wise. Take your Texas steak and so-called bologna sausage, together with their accompanying headache, and be well fed and happy.

OTHER DISEASES FROM ANIMALS AND ANIMAL FOOD.

Few fully realize the vast field for thought and study, and for the practical application of the deductions therefrom, opened up by the mere mention of the subject of the transmission of disease to man from animals and animal food, or the extent of the evils that might be abolished, or much mitigated, by the intelligent administration of the duties of those who have the care of animals or their products. And by care, I mean sanitary control, as well, and all animals, even those not used as food. So this phase of our subject soon passes the narrow domain of a meat inspector or a milk inspector, a State veterinarian, a State Board of Health, or even a National Board of Health, for it means the prevention of disease for the whole human race. The diseases, other than consumption, we derive from animals are milk sickness, glanders, trichina, hydrophobia, malignant pustule, tape worm, the ptomaine troubles, etc., to say nothing of fevers and pneumonia, or to strain a point, the prick of a post-mortem knife, snake bites, insect stings, the kick of a long eared mule, or the bite of a common house fly that has fed on carrion, all of which have caused death, and often sudden death.

Trichina is well understood, and I need say little regarding it. The hog is supposed to get the parasites from the rats that he eats, as it is common in the rodent. The report of the Chicago Academy of Sciences, which investigated the matter in 1886, was to the effect that one hog in 50 was trichinous. The remedy is simple heat. Thoroughly cook pork, and the parasite and eggs are killed. It requires 170 degrees, and that heat should go clear through a piece, as it may not in superficial cooking.

Milk sickness is the cognomen for a disease that has brought terror to many a rural region in this State, especially in early years. It comes from eating the flesh or milk of affected cattle, presumably those that have fed on the "milk-sick plant," probably a Euphorbia, and usually means sure death. If recovery accidentally takes place the tone of the stomach is generally impaired for life.

Malignant pustule, though rare, is one of the most fatal maladies to which the human family is subject, and it comes from eating the flesh or milk of cattle or sheep afflicted with anthrax or charbon, often a form of carbuncle, and the bite of a fly that has just fed on one of those carbunculous sores may transmit the disease.

Glanders, a disease of the horse, resembling catarrh, is easily communicable to man by way of the eyes, nose or mouth, and, though rare, is very fatal.

Hydrophobia is a disease that comes from the dog, as every one knows, and, as every one knows, it is a bad one. The dog never has hydrophobia—his disease is rabies. Hydro means water and phobia means dread, and the dog never has dread of water, but in a paroxysm runs into it and eagerly laps it, while in man water causes a horrible spasm of the swallowing muscles. These terms are so often used synonymously that I feel compelled to correct the error. The disease, according to my belief, is a brain trouble, brought about by the inequality of the sexes, a poisonous discharge coming down from the brain through the infundibulum into the nasal cavity, finally bathing the teeth. As in Constantinople dogs swarm everywhere, and rabies and hydrophobia are unknown, we look for the reason for this immunity and find it in Mohammedanism, for by it the Turk is forsworn from killing or injuring a dog. The fact that I never saw this statement in medical writings does not deter me from using it here. I have never yet seen a definition of what hydrophobia really is that is at all satisfactory to me, so I have manufactured one that is. Professor Huxley tells us that in everything it is better to have a wrong theory than none at all; for if there is a theory, facts or supposed facts will be collected and built around the theory, and after a while the truth is found out. So I hope to be able to prove the truth of the statement hazarded above. A great many physicians, even cranky specialists, even deny that there is such a disease, calling it a mental illusion, etc. They are of the caliber of those who deny that there is such a disease as "La Grippe" until compelled to prove it in their own persons. Pasteur says that by muzzling all dogs for three years hydrophobia will be stamped out. This looks reasonable, but I do not believe that it would stay stamped out three years if the present inequality of the sexes were maintained.

A tapeworm may not be considered a very dangerous customer, but he may be a very troublesome one, and he sticks close to the one he chooses to call his friend. He has his origin both in fish and flesh, particularly in rabbit. Rabbits get in gardens sometimes; so do dogs, and sometimes dogs like to eat rabbits. Ergo, all lettuce, cabbage, etc., should be carefully washed, as eggs may adhere to them.

Wool-sorters' disease is the name of a fatal malady that comes from handling goat and camel hair from Asia, and a similar trouble may come from handling South American or even domestic hides or sheep skins. Erysipelas is often so caused.

The "foot and mouth disease," so called in England, often attacks children who drink milk from cows infected with that disease, but a change of milk is usually efficacious here.

This whole matter of the causation of disease by animal matter, whether in food, water or air, should be kept prominently before the people until its importance is fully recognized, and in leaving this subject now I do so by presenting a clipping regarding it from the Philadelphia *Medical News*, made last summer:

> The subject is of so momentous a character as to demand the intervention of the National Government, and it would appear to be a wise course to delegate the control of animal sanitation, especially the animal contagia and parasites which affect man as well, to a National Board of Health, clothed with ample authority to investigate these diseases and apply suitable measures for their restriction or extinction.

ACTINOMYCOSIS.

We frequently read in the daily papers that another "cancer-jawed" steer has been condemed to death by the Meat Inspector, and, presumably, relegated to the rendering apparatus, and it is reasonable to presume that stockmen, butchers and meat-sellers in general look upon that officious official as a sort of Damocletian sword hanging over them and their business. But I do not remember to have read in any newspaper a description of the disease or condition called "cancer-jawed," though recently the Indianapolis Journal contained a brief editorial pathetico-humorous plaint, hoping that some one would give it some definite name to go by—this disease that is called "big-jaw," "lump-jaw," lumpy-jaw," "cancer-jaw," etc., so indiscriminately. Now, the name—actinomycosis—may not improve matters much, so far as typographical appearance is concerned, but it is, nevertheless, definite, the same being true of the disease itself.

Actinomycosis (or actinomykosis, as it is sometimes printed) takes its name from the vegetable organization called actinomyces, one of the fungi, or mold, so named by Harz, professor of botany at Munich, about twelve years ago, the word coming from two Greek words meaning ray (the microscopic appearance of the organization being that of an eccentric radiating structure) and fungus. The disease was first thought to be a form of consumption, or identical with it, but it is not, nor is it necessarily confined to the jaws or its bones, but may invade the mouth, tongue, nose, stomach, lungs, udder or skin. In many instances has the fact that the disease is inoculable been proven, and hence it is considered transmissible and infectious under favorable circumstances, especially when an injury resulting in an external or internal wound has been received.

Our farmers are familiar with several analogous diseases—that is, those caused by fungus—that destroy their grains, plants and roots, but it may be news to most of them to learn that this cattle disease is of that character. For instance, in wheat, "mildew" is of fungus origin, from the *puccinia graminis;* as is "bunt," from the *uredo fœtida,* while "smut," in the wheat flower, comes from the *uredo segetum;* rye, likewise, has its ergot, or cock's spur, from the fungus *spermœdia clavus,* the potato its *botrytis infestus,* the onion its *botrytis destructor,* and so on. One of the greatest enemies of the silk worm is of a fungous character, and so it goes all the way up the scale of animal life. As Mr. George Fleming, of England, one of the few men to thoroughly investigate our subject, said:

> The progress of pathological research is continually demonstrating the mighty part played by microscopic vegetable organisms in the production of diseases in plants and animals, generally leading to their destruction, and with more or less rapidity. The feeblest and smallest as well as the largest and most powerful are alike exposed to the ravages of these invading, relentless foes, whose attack is all the more destructive because it can rarely be detected at the onset; and their extreme minuteness and tenuity, as well as their insidious and obscure manner of operating, are also so many barriers to timely recognition and protective measures against their assaults.

Mr. Fleming is the author of many valuable "animal books," the President of the Royal College of Veterinary Surgeons, and Army Veterinary Inspector, and is consequently in position to command attention to his utterances, which are very valuable when we take into consideration the fact that our sources of reliable and scientific information on this subject are exceedingly meagre. He thinks it probable that the animal contracts the disease from eating moldy hay or straw (in other words, food with the fungus already on it), especially if there are scratches, fissures, abrasions or wounds in the mouth or on the jaw, though he does not say that it may not occur in some other way. (My belief is that the disease is more common in distillery-fed cattle than among others.) In animals the tendency is to cause new formation tumors, and hardening or degenerations of tissues, but in man (and he records sixteen cases in man), it tends to cause suppurative processes and metastatic abscesses. Until within a few years many cattle diseases, so-called, were known, which are now known to be only different manifestations of this one disease, modified by location principally, so I will now describe a typical case, as affecting the typical point—the jaw—as described by Mr. Fleming:

In 1877 Professor Bollinger, of Vienna, drew attention to this disease, which he claimed was frequent, which consisted in a kind of new-formation tumor that appeared on the upper or lower jaw, at the roots of the teeth, or sprang from the spongy tissues of the bones, gradually displacing the teeth, invading and destroying the healthy tissues, muscles and skin, abscesses forming, the tumor at times reaching the size of a child's head, the bones being reduced to an appearance resembling pumice stone. (He found another form affecting the tongue, and within a year had six tongue specimens sent him from Bavaria alone.) I need not detail the minutiæ pertaining to the microscopical appearances found, or how they were arrived at, and will simply say that the actinomycosis fungus or mold is, in many respects, similar to the common green mold, *pencillium glaucum*, which grows on paste, jam, damp leather, etc. It is enough to say that the affected animal would soon show emaciation and debility, resulting largely from its inability to masticate its food, and death would result; but this result rarely follows, because the course of the disease is ended more summarily—by death at the hands of the butcher in order to turn the animal into "beef." A frequent complication in one of these cases is the inevitable one that as soon as a tumor gets opened on the outside it becomes fly-blown, and consequently maggoty, so that the poor animal writhes with the torture of having to entertain a convocation of politic and vigorous worms who lunch off his own flesh.

Of course, these could soon be dropped out by a chloroform spray. These screw-worms are the product of the *lucilia macillaria*, or blow-fly, which deposits its larvæ on raw places, or, when an animal is asleep, on mucous surfaces, and these oviposits often develop into great pests for cattle and cattle men, to whom the chloroform treatment will prove a great boon. Of course, the remedial treatment of an actinomycosis-affected animal must come within the domain of surgery, as detailed in Fleming's small work, "Actinomycosis."

I regret my inability to bring specific, definite proof (if obtainable) that the flesh of a vigorous bovine attacked with actinomycosis is unfit for human food. Reasoning from analogy, I should say that it would be; still, an early case may have only a local effect, only affecting the meat by causing a general loss of tone —furnishing poor beef, but not necessarily impure. This is a question city boards of health must settle for themselves, and in the settlement of it one could easily foresee that the interest of the meat providers might clash with the supposed interests of public health, as, for instance, it has in the meat inspection law, recently declared unconstitutional.

I am in favor of endowing proper local health officers with supreme power in the matter of meat and animal inspection. But I should exact of such officers absolute, reliable knowledge of their duties, and familiarity with the facts actually determined regarding the disease-propagating ability of meat from infected animals used as food by man. It is my belief that many of the animals hurriedly condemned and slaughtered by the meat inspectors because of a wen on the jaw are the victims of an unwarranted interference, as are their owners. Were the animal presented to them headless, I doubt if many of them could tell whether or not the meat would be wholesome. These killers should have "grounds more relative than this" in justification of their action, and should be made to show what they know and do not know about this disease and the unwholesomeness of the meat in question. Were he, the killer, similarly afflicted, he would expect medical or surgical attention, not instant death on discovery, and I claim the same right for the animal. Let our veterinarians have a chance at this disease, and the general public will soon learn something about it. This is a question that has or will have large financial bearing in this State, and should be met intelligently.

Since writing the above, I learn that the farmers of Illinois are up in arms over it, as the following resolutions, just passed by the Central Illinois Farmers' Institute, at Monticello, will show:

> WHEREAS, The Live Stock Commissioners of Illinois have assumed the authority to condemn and destroy good, fat, healthy steers at the Union Stockyards, which are only affected with small lumps on their jaws, under the pretense of preventing the spread of contagious diseases; and,
>
> WHEREAS, We are informed by the address of Prof. D. McIntosh, veterinary surgeon of the Illinois University, delivered before this institute, that the disease called lump-jaw in cattle is not contagious, and that the flesh is not unwholesome food, as long as the animal is in a thriving condition and fats well; and,
>
> WHEREAS, Years of experience with cattle convince us that his conclusions are correct;
>
> *Resolved*, That we consider the action of the Live Stock Commissioners in condemning such cattle and consigning them to the rendering tanks a high-handed outrage, resulting in the robbery of farmers and producers and enriching the Union Rendering Company of Chicago, and we respectfully request the Governor of Illinois to take prompt action in the matter, and to take steps to stop this unjust and arbitrary exercise of power by the Live Stock Commissioners.
>
> *Resolved*, That the Secretary send a copy of these resolutions to the Governor of Illinois.

We will now pass to the consideration of the last subdivision of our article.

THE PTOMAINES.

It is with the infinitely little that the infinitely great conquers us.—*Hugo.*

Much benefit may accrue by attracting public attention to the peculiar danger at times attending the ingestion of certain articles of food, especially meat, milk, cheese and ice cream, when, because of improper preparation or care, the poisonous ptomaines are lurking therein. The fact is, that many sudden illnesses and unexplained deaths while in perfect health—if such a paradox can be allowed—that come like lightning out of the clear sky, are now by the best authorities assigned to this secret enemy. This where the number of the organisms are infinite and powerful, to say nothing of the temporary and lingering illnesses caused by them when few and weak. That admirable actress, Adelaide Neilson, our finest Juliet, when in good health, drank one glass of milk and, after suffering terribly, died in two hours. That glass of milk might have been able to "knock out" the great John L. Sullivan just as easily.

The word ptomaine comes from the word *ptoma*, a cadaver, or dead body, and ptomaines are cadaveric alkaloids, the results of putrefaction, and very poisonous. They are now known to infest many articles of food, and the patient investigators who use the microscope a great deal tell us that they are started by bacteria. Bacteria may be called a minute fungus, or parasite, invisible to the naked eye, which flourish mainly in animal matter, feeding preferably on the albuminous portion, and each substance may be said to have its own particular breed of bacteria. They increase with amazing rapidity in any substance in which they get a start, especially in high temperature, and the proper understanding of this fact has a very important bearing on, for instance, the rearing of infants. Every one knows that thousands of them die in our large cities every summer because of impure, diseased or unsuitable milk. Indeed it is one of the problems of the age how to rear a bottle-fed infant in a large city. They are so sensitive and susceptible that milk which might not harm a grown person, or even a large child, may be poison to them. My previous quotation from Mr. Fleming, under the head of "Actinomycosis," has a bearing on our ptomaine subject.

The ptomaines were discovered about 1870, simultaneously by Armand Gautier, a Frenchman, and Antonio Selmi, an Italian, each working along different lines. Gautier shows that these bodies are constantly being formed in life in our bodies—that these by-products of normal vital action (strictly speaking, leucomaines) come through a putrefactive rather than a combustive process, and that their non-elimination or non-oxidation by the bowels, kidneys, lungs, skin, etc., is the cause of many sicknesses and diseases. Selmi calls attention to the similarity in the toxic effects of these alkaloids with those of the vegetable alkaloids. He gave them their name, ptomaines, in 1875, and also furnished proof of the similarity mentioned. General Gibbone died in Rome, and chemists analyzed portions of the body, and gave the opinion that poisoning had occurred with the alkaloid of stavesacre. Selmi saved the prisoner's life by proving that the alkaloid was a ptomaine, not a vegetable alkaloid. Several similar cases are on record.

Prof. Victor Vaughan, of the University of Michigan, in 1888 published an interesting and exhaustive work on the ptomaines—their history, peculiarities regarding them in the different foods containing them, and their relation to disease, as well as their chemistry and pathological importance. Prof. Vaughan discovered and named tyrotoxicon, the particular ptomaine of milk, cheese and ice cream. We read of a poisoning, wholesale perhaps, with either of these articles, and the newspaper wind-up is to the effect that some verdigris, acetate, lactate, or other powerful mineral poison had been generated in manufacture or transit, when the real trouble was tainted milk—in short, a ptomaine. Tyrotoxicon takes its name from two Greek words, meaning cheese and poison.

I will not further increase the length of this article, except to recount the manner in which the poisonous tyrotoxicon may appear, for that may prove of interest and possible benefit. Elaborate detective tracings after cases of wholesale poisoning resulted, in a milk case at a noted summer resort, in finding that "the cows were milked at the unusual and abnormal hour of noon, the milk at once placed in cans, and then, without any attempt at cooling, jolted eight miles in the warmest part of a very hot day, when all old dairymen say that the removal of the animal heat is absolutely necessary in order that the milk shall keep well and have a pleasant taste, for otherwise a very disagreeable odor and taste are developed." This milk was chemically examined by tyrotoxicon experts, the poison being found. After some fatal cheese poisoning cases it was found that the milk had "stood" in a damp and moldy place, and the milk had absorbed the peculiar ferment that developed the poison. And in an ice-cream poisoning case: Two flavors had been used, lemon and vanilla, and all those who ate the vanilla were made sick, while none of those who ate of the lemon were affected. Investigation showed that the materials were identical, but for convenience the lemon-flavored cream was frozen immediately, while the vanilla-flavored one stood about two hours before freezing in an old back room, formerly used as a meat market, wholly unventilated—in the language of witness "in air like that of a privy vault." All know the extreme absorptive susceptibility of milk and butter, so comment is unnecessary.

Edward Wakefield writes entertainingly, even thrillingly, of the natives of the South Pacific Islands, near the Equator, and their use of poisoned arrows—ptomaine-poisoned arrows, as you may see:

> These people, such as the Solomon Islanders or the Santa Cruz Islanders, some of whom are among the finest physical specimens of mankind, are the most horrible savages on earth. They spend their whole life in bloodshed, and are not only cannibals, but addicted to the use of poison as the main if not the only weapon of war. They have spears and arrows pointed and barbed with sharp bone or wood hardened in the fire, and every one of these is poisoned so that the least graze, scarcely enough to draw blood, is fatal. Where do these savages get this atrocious poison, and what does it consist of? They get it from their own flesh and blood, and it consists of nothing but the fluids of the human body. When they want a supply of poisoned weapons they take a number of corpses after a battle, or they kill a number of prisoners expressly, and having left the bodies to putrefy in the burning equatorial sun for some days, they stick them full of spear and arrow heads, which they leave there for weeks or months, or until the bodies are entirely dried up. That is the whole process. When those spears and arrows are drawn out they are imperishably steeped in poison as deadly as that of wourali, or the most noisome snake—a poison absolutely destructive of the life of every creature whose blood it touches. The possession of the secret of poisoning by means of putrefied animal fluids, by the most degraded of the human family, is all the more remarkable because the most advanced men of science have only recently discovered the explanation of the phenomena produced by that poison. The putrefaction of the animal fluids itself brings into existence a multitude of microscopic living organisms, germs or microbes, as they are now called; and it is the introduction and infinite multiplication of these in the healthy blood that produces paralysis and death. I have seen a man-of-war's man, a magnificent specimen of vigorous, redundant manhood, wounded so slightly by a poisoned arrow that he himself laughed at it, and scarcely any abrasion was visible, yet reduced before sundown to utter helplessness, and consigned to the deep by his horror-stricken shipmates before another day had passed. Commodore Goodenough, commanding the British squadron in those seas, died in indescribable torment from a wound so slight that it was not believed at first he had been touched at all; and more deaths have occurred among sailors and traders from this cause than from any other. A bundle of arrows from the Solomon Islands was sent to England many years ago and deposited with other curiosities in a museum at Colchester. A gentleman visiting the museum foolishly handled these weapons, and, feeling the point of one of the arrows, inflicted a prick like that of a pin. He died of it in raving agony three days afterward.

It is in this manner that post-mortem and dissection wounds have so often caused blood poisoning and death.

In conclusion, as a partial justification for thus prominently appearing in the role of an alarmist, or rather the possibility of appearing to be one, or being called one, I will quote the pertinent reply made by the October *Sanitarian* to the letter of a subscriber. The subscriber writes (after complimenting an article): "But at the same time I would not introduce your publication into a family, to keep nervous women in a state of alarm all the time about what they eat, drink, etc. Danger lurks on every hand, disease and death are always near, but we need not die a thousand deaths in anticipation. While there is nothing perfectly safe, some things are less dangerous than others." The *Sanitarian's* reply is: "We believe it always better and safer to teach and learn the truth. It is true that danger lurks on every hand, but he who dies a thousand deaths in fearing it is not he who knows where the danger is and knows how to avoid it, but he who fears a danger which he can localize only vaguely or not at all, and consequently does not know how or where to avoid it."

A STUDY OF SUICIDE.

BY WM. B. CLARKE, M. D., INDIANAPOLIS.

That which may be termed a wave of suicidal mania is now sweeping over the United States, and it has assumed gigantic dimensions. This fact, universally acknowledged as such by the press of the entire country, would seem to prove the truth of Buckle's assertion that " human beings are mere straws on the face of society, which any social disturbance may catch up and whirl about at its own will." The apathy of contemporary society concerning this prevailing evil of suicide, especially from its moral and social aspects, is greatly to be deplored. Indeed, were it not for those watch-dogs of public welfare, the editors, it would be safe to say that the public knows little about the evil, and cares less. Nor has the State Board of Health for years considered the subject important enough to make allusion to in its pretentious yearly volume of reports (other than the usual half-dozen lines in the cause-of-death table), even though its cover be stamped, as it is, with the rhymic truth that " Public health is public wealth." The excuse can not be made that the wave has not reached this State or city, for it has, and gathered volume as it passed; and in this city alone it is fair to assume that there have been made seventy-five attempts to commit suicide in the four months just passed —from May 1 to September 1. I say seventy-five, for I adduce statistics regarding forty-one undoubted cases published in the city papers, saying nothing about several doubtful cases and several "found deads," and assuming that one-third the unsuccessful attempts are hushed up, never getting into the newspapers, which every physician knows is a fair estimate. In the *Indianapolis Journal* of September 2, the head physician of the City Dispensary, in speaking of his work among the suicides, is made to say: " There would be nine cases of female poisoning to one male," and the fatal cases constitute "an average of one in twenty." Whatever the Dispensary record may indicate, by the reliable data given below we see that of the forty-one cases of attempted suicide fourteen were successful and twenty-seven unsuccessful, twenty-five being females and sixteen males, while of the fourteen successes eight were males and six females, and of the twenty-seven failures nineteen were females and eight males. The list is as follows, and I have placed the authoritative newspaper clipping regarding each case cited with the editor of the *Indianapolis Independent*, who, on September 14, published much of this article:

INDIANAPOLIS SUICIDES FROM MAY 1 TO SEPTEMBER 1, 1889.

Successful Attempts.

May 2.	Wm. Costello, carbolic acid.
" 4.	Mrs. Josie Kissell, pistol.
" 6.	Henry Just, morphine.
" 7.	Nettie James, morphine.
" 15.	Ferdinand Shroeder, razor.
" 16.	Albert Patterson, strychnine.
" 16.	Annie West, morphine.
" 21.	Miss Carrie Nicklaus, drowning.
June 13.	Patrick A. Ward, cyanide of potassium.
" 24.	Oscar T. Hagerman, morphine.
July 11.	Matthew Mayne, pistol.
Aug. 4.	Miss Mary Lamb (third attempt), morphine.
" 4.	Mrs. M. Bruce, morphine.
" 16.	W. T. Ladd, morphine.

Unsuccessful Attempts.

May 13. Mrs. Viola Stevens, morphine.
" 16. "A well-known South Side young lady," morphine.
" 17. Mrs. Hattie Burton, morphine.
" 18. Abraham Shay, morphine.
" 19. Frankie Miller, morphine.
" 28. Nellie Eakin, morphine.
June 6. Maggie Jones, laudanum.
" 24. Alice Mitchell, laudanum.
" 24. Grace Hullinger, morphine.
" 30. Mrs. Viola Stevens (second attempt), morphine.
July 11. Mrs. Alice Myers, arsenic.
" 16. David Stewart, morphine.
" 21. John Mitten, carving knife.
" 22. Cora Mueller, chloroform and creosote.
July 24. Alice Sanders, morphine.
" 29. Miss Jennie Froelich, morphine.
" 30. "Lottie," morphine.
Aug. 5. Mrs. Mary Johnson, morphine.
" 15. Thomas Clark, knife.
" 15. William Swanston, Jr., laudanum.
" 18. Woman, name not given, drowning.
" 24. Edward Aszman, knife.
" 25. Frank Sims, glass cut.
" 28. Mrs. W. J. Owens, swallowing chloroform.
" 30. George Adamson, pistol.
" 30. Mrs. Bock, morphine.
" 31. Laura Weldon, morphine.

That the foregoing list does not include all cases is clear to me. For instance, in the Dispensary interview above referred to we read: "In the month of May we had twenty cases in twenty days, and one physician of the Dispensary has treated as many as eleven cases in one week." My list does not show them quite so thick as that, but covers all the published cases (and I get the Journal, News and Sun every day and The Independent and another weekly paper), so, while like Mercutio's wound, "'tis not so deep as a well, nor so wide as a church door, 'twill serve" to prove the extent of the malady. So much can hardly be said of the State Board of Health table referred to above, and this because of the reprehensible practice of "whitewashing" undoubted cases of suicide in the returns made to local boards, under the conveniently misleading heads of "heart failure," "apoplexy," "accident," etc., sometimes as pertinent to the case in hand as the return "died for want of breath" would be, or "suffocation," as the verdict after one of Judge Lynch's hanging bees! And all this for politic, social, family, insurance, burial in consecrated ground, or other "cosmetic" reasons. It is fair to say that we can only infer this, however.

ANALYSIS OF STATE SUICIDE FIGURES.

By the table alluded to we find the number of suicides to have been 129 in 1884, 110 in 1885, 95 in 1886, 119 in 1887, and 101 in 1888. For instance, we know that 14 have died by their own hand in Indianapolis in four months, a ratio of 42 deaths in a year (to say nothing of a number of doubtful cases and several "found dead" cases, the mystery of whose death has never been publicly explained). The State has a population of 2,000,000, not including Indianapolis, which itself has a "suicide belt" of about 100,000 persons. If the outside State keeps up its capital's average 840 cases of death by suicide must be reported for this year, to which must be added Indianapolis' quota, making a grand total of about 900—far more, for purposes of comparison, than were caused in 1887 by either of those great bugbears typhoid fever (720) or cholera infantum (758), and surpassed by only two diseases, phthisis (2,072) and pneumonia (1,290). Looked at in another way: If Indianapolis has had 75 cases of attempted suicide in four months, it would be at the rate of 225 in one year, and for the State a total of 4,725 cases; or if we apply to the whole State the Dispensary average of fatalities to attempts as "one in twenty" (*i. e.*, 900 multiplied by 20), we would have a grand total of 18,000 cases! But figures will lie, and I hope my ingenious imaginary ones do. It is certainly fair to assume that the Health Board suicide figures do also when they tell us that Indiana had only 101 suicides in 1888 and 95 in 1886. I think it safe to say that a case a day is detailed in some paper in the State. This "whitewashing" system, above alluded to, tends to rob the whole Coronial service of all reputation for reliability, by creating a lurking feeling of distrust in all who know the inside workings of such a practice. There can, of course, no objection be made to the practice of giving the base-runner the benefit of the doubt (to use a popular expression), especially where there is no suspicion of crime and where the verdict of suicide would be a difficult and expensive one to make, but where the public pays so much in the way of Coroner's fees, clerk hire, witnesses' fees, post-mortems, chemical analyses and microscopical examinations, etc., it is at least entitled to know the truth as to the final outcome in plain cases. Or are things still as they were in the old Crowner's quest times, when the Gravedigger in "Hamlet" said: "Why, there thou says't. And the more pity, that great folk should have countenance in this world to drown or hang themselves, more than their even Christian"? (Regarding the expense item alluded to above, Lawyer Van Vorhis, probably the best-informed man on that topic in this county, and who has in his possession the expense records of 400 inquest cases in this county, informs me that he thinks the usual average expense to the county of an inquest will be about $25, exclusive of the $25 post-mortem fee when such a procedure is needed, or at least gone through with, and the expensive chemical analyses and microscopical examinations occasionally made, one such case costing the county $500.) A more careful and extensive compilation of suicide statistics should be made by the Health Board, and the report should include a list of attempts as well as successes, and should mention sex, age, occupation, condition, nationality, religious denomination, state of health, cause of the act, and the means used to rid themselves of the real or fancied burdens of life and obtain refuge in eternal repose. Such reports might prove of great value to scientific investigators and be incorporated in the census table. Of Indiana's 119 cases in 1887 the route taken (to use the usual local newspaper expression) was not specified in 73 cases. The Board of Health reports are as much reports of disease and death as of health, and the topic of suicide is knocking loudly for the fuller representation to which it is entitled.

HAS MAN THE RIGHT TO SUICIDE?

Suicide has recently been called a malady of cultivation, a characteristic of an advanced and even prosperous state of society, and its prevalence and increase in all civilized countries is in many ways lamentable, pervading as it does all classes and conditions of men. Whether man, who has no voice in the matter of entering this world—

> "Fashioned and shaped by no will of his own,
> And helplessly into life's history thrown;
> Born by the law that compels men to be
> Born to conditions he could not foresee"—

Has the legal and moral right to determine when he shall quit living in it is a question that anthropologists have disputed over for ages. Certain it is that now-a days many people act on the reasoning that, as they had no voice of their own in the matter of entering this world, are taxed to live (or rather to death), and have to get licensed to get married, they at least have the right to leave the world when they desire so to do. Indeed, in a foreign country a society has been formed for the furtherance of this very object, and members are suitably "assisted" when they indicate a desire therefor. This organization is called the Euthanasia society, euthanasia meaning an easy and painless death. I know of but one State in the Union that has a law making it a crime to attempt self-destruction—New York. (And I must confess that how the voluntary and nervy Brodie Niagara Falls navigation and Brooklyn bridge jumping experiments, for fame and revenue only, can be construed into *bona fide* attempts at suicide, more than a balloon ascension, a 2,000-foot parachute leap, or the hair-raising Coney Island 150-foot headlong dive into a net, are legal enigmas too intricate for me to solve. If there are no laws covering such matters, don't invade and bring ridicule upon the suicide law.) I believe that no State in Continental Europe has such a law, though England has, and confiscates all money and valuables found on the corpse. (A notable instance of this confiscation, of interest to local residents, occurred in the winter of 1876, I believe, to Mr. Kingan, who left here for England via Canada, and got off the train and killed himself near a Canadian station.) Nor do I know what material effect such a law has in stemming the rising tide of this mental contagion epidemic that affects the nerves and brains of so many of our fellows. History records such attempts at suppression which were effective, because enforced with despotic power. For instance, the great Napoleon once burned all his sentry boxes because a sentry hanged himself in one, and thereby initiated a formidable mania that threatened to deprive his army of sentries. When the Milesian maidens were hanging themselves in great numbers, a decree ordering that the naked bodies of such suicides be borne through the market-place, says Plutarch, soon put a stop to such deaths. Tarquin the Proud stopped a similar epidemic among his soldiers by nailing their naked bodies to crosses. But these were for epidemics, not individual cases. What shall be done by society as a whole to abate this evil, this inevitable ailment of the time? Who will answer?

To what causes can we trace the steady increase in suicide, that frightful and apparently abnormal development of human society, and where and in what manner shall we look for relief in an endeavor to minimize if not abolish its baleful influence? I am not presumptuous enough to think that I can clearly and authoritatively answer so far-reaching and important a question in your limited space (or if I had all there is), and will be content to simply outline the result of some little study of it.

HISTORICAL REVIEW.

Looking into history, we see that by the teachings of Pagan philosophy the theory and practice of suicide are held to be correct. That grand old philosopher, Epictetus, who supplied so many of the solid chunks of wisdom so often quoted at the present time, upheld it. He said: "Live contentedly, or be gone; if you don't like life you may leave it—the door is open, begone!" And his noblest student, Marcus Aurelius, declared that the wise man is the arbiter of his own life. Cicero, Seneca, Œdipus and Cato said the same, and Cato suicided with a sword. Roman warriors often killed themselves on their swords from disappointed ambition, or rather than be captives, turning, as Brutus says, "our swords in our own proper entrails," just as we see Cassius and Brutus do it in the noble and manly play of

"Julius Cæsar." Brutus's wife, Portia, "Cato's daughter!" also killed herself. Mithridates and the great General, Hannibal, the conquerer of the world, did the same. The death of Marc Antony, that great, yet weak, commander, was equally romantic—"a Roman, by a Roman valiantly vanquished!"--and his associate, Cleopatra, Egypt's beautiful and accomplished queen, in very truth shuffled a mortal coil, aspic though it was, as she said, "I feel immortal longings in me!" Themistocles and Zano were suicides, as were Ajax, the lightning-defier, Codrus, king of Greece, Diogenes, of lantern fame, Empedocles, Peregrinus, Jocasta, Dido, Antigone, Hæmon, Lucretia, Euridice, Razis, Eleazur (with several thousand of his followers, as blindly as a flock of sheep going over a precipice), to say nothing of lower lights, and a million common people. But Plato (300 years B. C.) was opposed to suicide, and Pythagoras (500 B. C.) was the author of the noble sentiment, "No man should abandon his post in life without the orders of the Great Commander."

Coming now to the Christian era, we see that the march of suicide receives a decided check, for the act was practically unknown among the primitive Christians, continuing so until the horrible persecutions among them broke out, for, though all did not endure to the end, their faith and hope gave them the fortitude to endure their persecutions and tortures or meet triumphant deaths at the ravenous jaws of the well trained lions and tigers of the arena. Still, quite a number, in the transports of recent conversion, killed themselves to get at once to heaven, as, indeed, in the Middle Ages, did many an ascetic monk. Many Bible quotations show forth the reason for this abstinence, but it need not be more than outlined here: For instance, Matt. x, 22, Christ says, "But he that endureth to the end shall be saved;" and in Rev. ii, 10, we read, "Be thou faithful unto death, and I will give thee a crown of life;" and Paul charges Timothy to endure afflictions to the end, as he has, for, as his reward, "henceforth there is laid up for me a crown of righteousness;" and in the 55th Psalm, "Cast thou thy burden on the Lord, and he shall thee sustain; yea, he shall cause the righteous man unmoved to remain."

BIBLE REFERENCES TO SUICIDES

are rare, comprising Samson, Abimelech, Ahithopel, Saul and his armor-bearer, in the Old Testament, and Judas was the only one in the New Testament, (unless we include the herd of swine that ran into the sea—Matt. viii., 32). The Jews had a great horror of hanging especially, for "He that is hanged is accursed of God." (Deut. xxi., 23). The subject of suicide was only once alluded to, in the discussion between Jesus and the Jews in the temple (John viii., 22). The story of the suicide of Judas is interesting for several reasons, showing the origin of our potter's field for one, as well as giving a chance for argument, and so may profitably be reproduced: In Matt. xxvii. we read that Judas, in remorse for having betrayed the Savior for thirty pieces of silver, "cast down the pieces of silver in the temple, and departed and went and hanged himself. And the chief priest took the silver pieces and said, It is not lawful for to put them into the treasury, because it is the price of blood. And they took counsel, and bought with them the potter's field to bury strangers in. Wherefore, that field was called the field of blood unto this day." And in the grand painting, "Christ on Calvary," on exhibition here a year ago, the artist, with more fidelity to art than the facts in the case, as Judas died even before the conviction, depicits him running from the scene, the embodiment of remorse. But there is warrant for the Jews' claim that

Judas did not hang himself, for Acts i., 18, makes his death accidental: "Now this man purchased a field with the reward of iniquity; and falling headlong he burst asunder in the midst, and all his bowels gushed out," and that field was called Aceldama, the field of blood.

Without pursuing this deterring reason path any longer, it is sufficient to state that the consensus of opinion among modern writers on the subject gives full credit to the fact of the suicide-restraining power of religion. This was first recognized by the Catholic church in the year 452, when, looking with a jealous eye at the manifest influence upon the world of the marked comparative immunity from suicide which had obtained among the early Christians, and shrewdly realizing the necessity of doing something to further avail itself of the advantage of this influence, it stepped in, and in the declaration of the Council of Arles, A. D. 452, stigmatized

SUICIDE AS A MORAL SIN.

But its subsequent penalty ideas were of Greek origin, or rather founded on the then existing Greek laws, which pursued a suicide with mutilation of the body, deprivation of funeral rites, and eternal disgrace, while the then-existing Roman laws were directed toward his possessions only, forfeiting them to the Empire, and the Roman Empire fell A. D. 476. At the present time the Catholic Church refuses a suicide burial in consecrated ground, unless there is an attending physician's or Coroner's certificate that the person was insane. This burial in consecrated ground question quite often gets into the courts for settlement in our large cities, especially New York. It arises from other causes than suicide, also, and was the cause of the great Guibord riots in Montreal during the '70's. Shakespeare fascinatingly handles it in the church-yard scene of "Hamlet," where the gravediggers, at work on Ophelia's grave, say:

> *Second Gravedigger*—If this had not been a gentlewoman, she should have been buried out of Christian burial.
>
> *First Gravedigger*—Why, there thou say'st. And the more pity, that great folks should have countenance in this world to drown or hang themselves, more than their even Christian.

And at the pathetic burial scene, where Ophelia's brother speaks his mind as to the "maimed rites":

> *Priest*—Her obsequies have been as far enlarged as we have warrantise. Her death was doubtful, and, but that great command o'ersways the order, she should in ground unsanctified have lodged.
>
> *Laertes*—Must there no more be done?
>
> *Priest*—No more be done! We should profane the service of the dead to sing sage requiem, and such rest to her as to peace parted souls.
>
> *Laertes*—Lay her in the earth, and from her fair and unpolluted flesh may violets spring! I tell thee, churlish priest, a minist'ring angel shall my sister be when thou liest howling.

During the middle ages up to 1500 self-destruction was not very prevalent, and for want of time and space we will proceed to speak of

SUICIDE IN MODERN TIMES.

Now that we have seen that suicide is not necessarily "a malady of cultivation," a peculiarity of the present time, or always caused by insanity, we may just look at the writings of its more prominent apologists, like John Donne, Dean of St. Paul's (whose "Biathanatos" was published in 1644), the Swedish philosopher, Robeck (1736), and Grotius and Puffendorff, during the Reformation time (though Luther condemned the practice). In England it was upheld by Locke and Hume (the latter published in 1783). Rousseau and Voltaire wrote on the subject, and Voltaire once made an appointment to commit suicide, but backed out. Then came the "literature of despair" of Sénancour, Schlegel, Jean Paul, Byron and Goethe, the latter's great "Werther" being "a faithful representation of the moral experience of the period." Goethe, Germany's greatest imaginative writer and poet, once made a study of the suicides of classic history, selected Otho's choice, and tried it several times but failed; then, laughing the whole matter off, he took a vow to live. In that masterpiece "Faust," he teaches a great moral lesson in having Marguerita defeat the devil in refusing to commit suicide, preferring to endure her shame and suffering while waiting, even longing, for death—and her reward is translation in the arms of angels. The treatment of suicide by dramatists is a study in itself. The terrific one of Othello, as shown by Booth and Salvini, will haunt the memory of every one who has seen it. Romeo and Juliet were "untimely cut off." But the immortal bard made the ambitious Richard fight to the end, though once "By the apostle Paul, shadows to-night have struck more terror to the soul of Richard than can the substance of ten thousand soldiers, armed in proof, and led by shallow Richmond!" Chatterton and the painter, Hayden, suicided. Cowper attempted it, and Crabbe and Hugh Miller came near it, as did that great master of music, Beethoven, because of deafness.

Suicide, as has in effect been said by an able writer (Dr. O'Dea, whose work I have liberally quoted from), presupposes

TWO NECESSARY CONDITIONS—

moral and physical impressions derived from without, and a nervous impressibility which magnifies and distorts them and gives them a dangerous power to affect happiness. Though in forensic arguments an attempt at suicide is usually held to be *prima facie* evidence of insanity, or at least "a screw loose somewhere," I can but believe that nowadays the intuitive belief is to the contrary, at least the extreme insanity part of the proposition, and the courts frequently uphold this view. I witnessed the judical hanging of Phillips, the wife murderer, in the jail yard here a few years ago, and well remember that the strangler's rope tore open the ghastly unhealed and self-inflicted wound in his columnar and ill-fated neck. Will the scene be soon repeated in a precisely similar case now pending? (Azman's). Judically these cases might well be classed as criminally insane (as Guiteau should have been), and provided for appropriately—but Indiana has not made appropriate appropriation along such a line, and so the next best thing is done. (Sir James Fitz James Stephen, the Judge who convicted Mrs. Maybrick recently, in his "History of the Criminal Law of England," reviews the celebrated Dove case, in which the question of criminal responsibility arose, and in which an interesting and important definition of moral insanity was formulated thus: "A man by nourishing an idea may become so diseased in his mind that he can not control it. This is moral insanity.") Perhaps all the psychiaters would not care to publicly announce that an attempt at suicide did not presuppose insanity even if that was their belief, which I think is the private belief of many of the leading alienists of the day. This very week Dr. David Tilton Brown, for nearly twenty-five years chief of the famous Bloomingdale Insane Asylum of New York, has hanged himself near Batavia, Ill., and can at least go on record as having plainly proved himself thoroughly familiar with the theory and practice of suicide. It is very easy for those reeking with health, wealth and happiness, with everything that taste can suggest or money buy, to speak flippantly of some hospital-stranded human wreck, of a poor suicide and his act, but Ophelia makes no truer utterance than "Lord, we know what we are, but know not what we may be." The act seems often sanely performed, as by the euthanasiast's theory, to escape, as Brutus says, "these hard conditions as this time is like to lay upon us," or as Hamlet says, "to end the heartache and the thousand natural shocks that flesh is heir to," and they feel in full accord with the poet's words: "Tired of the heat and glamour of the day, we hear with joy the rustling garments of the night."

It has been said that genius is closely allied to madness, and the proposition that suicides were necessarily insane was first formulated by the great French mad-doctor, Esquirol, but O'Dea (whose book, 1882, should be read by all interested, and to which I am much indebted in the preparation of this article) plainly says: "It can not be too strongly impressed on the mind that suicide is, *per se*, no more evidence of insanity than crime against the lives and properties of others," and he adduces the statistics of Europe that show that only "one-third of the total of self-inflicted deaths are due to diseases of the mind."

AMONG THE CAUSES OF SUICIDE

may be placed hereditary tendency, education (or want of it), certain literature, financial losses, etc., love troubles and jealousy, ill health, temperament, insanity, abuse of stimulants, (especially by persons who have suffered from sunstroke or severe blows on the head, as great cerebral irritability is easily produced in such persons), regular gambling, and in this era of greed for wealth and the wild speculation attendant thereto, the reaction following the struggle therefor causes many, when the disappointment of failure is fully realized, and sudden riches sometimes cause it. An unhappy childhood may be an important factor, so we must say, with Sydney Smith, "If you make children happy now you will make them happy twenty years hence by the memory of it." Dr. E. H. Clarke, in his excellent book, "Sex in Education," thinks children should avoid intellectual competition as school, especially among girls. But we have not space to refer to the influences of race, sex, occupation and many other items, nor much to disease, even though the condition often called "malaria" deserves an extended mention. Few consumptives commit suicide, hopefulness being such a prominent and sustaining characteristic of that disease, in marked contrast to those having liver or "malaria" troubles, fully justifying the witty *double entendre* reply to the question, "Is life worth the living?" as follows: "That depends on the liver."

I feel confident that a frequent cause of suicide has been generally, if not entirely, overlooked, and so am impelled to utter a word of warning regarding it, viz., the reckless use of quinine, especially its use unauthorized by a physician. Any one who knows the pathogenetic ability of quinine, or rather its ability to cause symptoms or perturbations in the well or nearly well person, especially brain and nerve symptoms, can not deny that it possesses the power to produce a condition nearly allied to insanity, if, indeed, it practically falls at all short of insanity. In large doses it is a depressant, instead of a stimulant, contrary to the popular belief, and it is the most popular and universal every-day amateur remedy. Everybody seems to take it, and for any and every ailment. For want of space I can not further elaborate this point (as it rightly calls for a sanitary article of its own), but it is reasonably easy of proof that many insanities, suicides and murders can be traced directly to the ill-advised and inordinate use of quinine.

We can not treat of the Japanese hari kari, often a form of legal execution, nor to the Juggernaut car or suttee of India, religious acts, though it is now known that the suttee had its origin in a monstrously sinful and fraudulent perversion of the Hindu bible by its interpreters (the command against being twisted into a command for).

The imitation or mental contagion influence is the match that fires the magazine in many cases, and it is very doubtful if the extended newspaper references given such cases is wise. But can such reference be curtailed? The New York laws provide that reports of hangings shall not be published, but the World says it defies them.

BISHOP CHATARD'S ARTICLE.

The only considerable contribution to the literature of suicide from an Indianapolis pen, as far as I am aware, was written by the Rt. Rev. F. S. Chatard, Bishop of Vincennes, and will well repay careful perusal and study between the lines. It is entitled, "The Frequency of Suicide," founded on Morselli's statistical book, and occupies the post of honor in the Catholic World, February, 1882, vol. 34, page 577, and the volume is in the reading-room of our Public Library. It is, of course, written from an intense Catholic standpoint, and well shows forth the restraining influence to which I have referred of the church and religion. The distinguished prelate in the above article particularly instances the people of or rather in Ireland, with little aim in life, owing to their persecutions and disadvantages, and among whom suicide is rare: "But there was an aim beyond this life, and that aim was God. Their history has shown that the prevention of self-destruction is to be found in the supernatural power of the religion of Christ, the Redeemer of the world." There is much truth in his confined application of those words, but it is not all there. The Irish have vitativeness strongly marked, and their loves and attachments are deeper and more enduring than those of many other races, and to this fact must be given some of the credit of their greater immunity. As the great majority of the Irish throughout the world are Catholics, and as they are more tenaciously, perhaps blindly, submissive to churchly power and mandate than the average Protestant (who has no mandate or public penalty, and also having less of the element of fear mixed in with his hope) I suspect that this combination of these facts is a powerful factor in modifying the statistics in favor of the Catholics. For instance, the Koran forbids suicide under any circumstances, and pronounces it "a graver crime than homicide," but in fighting and dying for religion, with utter contempt for his life, the Turk is preëminent. It is not necessary to carry our subject further, nor speak of suicide among animals, so we will at once proceed to

THE PREVENTION OF SUICIDE.

The deterring power of religion has been treated of, and it is only necessary to allude to the fact that the statistics of the world are immensely in favor of Catholicism as compared with Protestantism. For instance, the statistics of 1872 in 1,622 cases of suicide in Prussia in which the religion was known show that 1,368 were Protestants, and only 243 Catholics. Morselli (chief of the Turin asylum) gives his great reason for this on p. 125 of his book (and which Bishop Chatard elaborates in his article I have mentioned). I will add that the facility of entrance to a Catholic church at all hours, with a priest in attendance, following the plan of the holy Jerusalem of Revelations, that "the gates of it shall not be shut at all by day," has often been the means of preventing a suicide, for as some despairing wretch kneels at the confessional and receives a real or fancied absolution his mind undergoes a change and he goes on his way rejoicing.

Passing over the immense value of early moral training with only the previous reference or inference, and the importance of having a definite aim in life, and coming to prevention by legal means, I would recommend a study of the history of the laws of the world regarding suicides, and their workings, not forgetting the contemporary one of New York, and that a suitable law be drafted, put through the Legislature, and enforced. It can do no harm, may do much good, and will at least open up a new line of study for lawyers and give them something to do. Comte and Buckle argued against such laws, but illogically. If every person between certain ages has a certain average financial value in dollars and cents to society, as statisticians tell us, then has society the right to protect its vested interests; if we have the right to say that a man can not perform such a natural act as to get married without getting out a license so to do, we have the right to try to regulate suicide by legal enactments. Coronial interpretations should be strictly regulated and reliable, and all the necessary expense connected with a suicide case, ordinarily borne by the public, should be thrown on the estate of the suicide, if he has one.

In conclusion, the need of a law regulating the sale of poisons by druggists has become imperative. True, most attempts "via the morphine route" are unsuccessful, for the reason that too much is taken, producing vomiting, the end in view being defeated. But this matter must be regulated. Why try to regulate the sale of whiskey but not poison? I can do no better than quote my own words in an interview, regarding a double-suicide case I attended, in a local paper Sept. 20, 1884:

> The doctor thought that the State should exercise a more rigid supervision over drug stores, and said that he was sure the chief reason why there are so many cases of accidental poisoning and successful and unsuccessful suicides in this city lay in the fact that under the present loose system any one could go to a drug store and buy powerful poisons unquestioned. He condemned the action of Governor Williams in vetoing the bill regulating the abuse, and believed that the druggists themselves would favor restrictive legislation, such of them as he had spoken to on the subject having intimated as much by saying that they disliked to pander to narcotic habitués, but could not now take refuge behind a prohibitory or regulatory law, as there was none.

This restriction should also be applied to all articles of the "Rough on Rats" class. Make the procurement of poisons as difficult as it is in England, where, as was elicited from the testimony in the recent Maybrick case, the women, in order to procure their favorite complexion-producing arsenic, have to purchase poison fly-paper and extract it by soaking in water.

Sept. 6, 1889.

THE MIND CURE AND OTHER VAGARIES.

BY JOHN N. TAYLOR, M. D.

The apostles of the "Mind Cure," "Christian Science of Healing," etc., have taught us nothing new. The influence of the mind upon the body in causing and removing certain morbid conditions (pseudo morbid) has been noted and dilated upon ever since the days of the "Father of Medicine." The art of employing it has worn successfully the garb of Paganism, Christianity, Mohammedanism, and Mysticism, but has never lost its essential qualities, nor is it likely to do so. It has had more avatars than Buddha, but unlike him, each successive resurrection has disclosed a weaker vitality.

Certain cures were wrought under the lucubrations of the Asclepiadae and the grateful recipients thereof hung up memorial tablets in the temple of Asculapius, bearing the proper ascription.

The therapeutist of to-day would readily recognize a similarity in the means employed and those of the disciples of Mrs. Eddy and Dr. Evans.

When an epidemic made its appearance the dictator simply drove a nail in the Capitol. If the epidemic was so inconsiderate as to continue its ravages after such a radical procedure, the sibylline scroll was then consulted, the meaning of the oracle sought out and carried into effect. Were nothing found in the mysterious scroll sufficiently explicit for the purpose the priests directed that another temple to Apollo, or Esculapius should be built, and so the people were satisfied.

It is strange that the testimony to the efficacy of these measures seems as irrefutable as that with which St. Jacob's oil, or Warner's Safe Kidney Cure, is heralded to a suffering world.

We dare not conclude that the historians cotemporaneous with the events they narrate have misrepresented this, else how about their veracity in other particulars? Conceding the chronicler to be veracious, how can we understand the extinguishment of the plagues by the employment of such measures?

It is somewhat characteristic to-day, it certainly was much more so in the dark ages, that in the presence of calamity, whose origin, potency and utmost reach are unknown, that men run together for mutual protection and counsel. They abandon their regular habits of eating and sleeping, exercise and recreation. They swallow their food in fear and agitation, they toss in perturbed slumber upon uneasy couches for a few of the hours that should be given to "nature's sweet restorer," sleep. In consequence of herding together, the plague struck dozens at one blow; in consequence of depletion, debility and enervation the blows were mortal, where else they might have been repelled. How did the means for relief procure abatement of the plague? Why, the public attention was fixed upon something new, hope, expectancy arose, the daily habits were resumed, and affairs went on in their old accustomed round, and so the material upon which the plague fed was exhausted.

A more material agency came into play in those cases where the sufferer was ordered by the priest of some neighboring shrine to make a pilgrimage to some distant temple. Here exercise in the open air, a better climate, purer water, abstinence from certain articles of food, combined with the mental impression, to restore the invalid to health.

By far the greater portion of learning consists in knowing that, that which was once thought to be truth is not truth. When mankind believed that Jupiter, Apollo, Hermes, were true gods, and members of that immortal throng that were supposed to quaff ambrosia upon Olympus it could experience relief from all their supposed maladies while offering gifts before their several shrines. When, by the light of the True Cross, these were discovered to be demons or chimera, their power of healing was gone.

During the Middle Ages, the same phenomena are manifest under widely different circumstances. The ancient temples are in ruins and the gods are in exile. The Cross and the Crescent divide the empire of the world, yet mankind, in its essential nature, remains much the same that it ever was, having the same unlimited possibilities of hope and the same boundless credulity. Accordingly, the same cures go on at the shrines of saints, at the touch of relics of sacred martyrs, in the presence of a piece of the True Cross, as were wrought in the temples of Phœbus, Apollo, Jupiter, Ammon, and Æsculapius. The testimony still remains respectable, disinterested, and unimpeachable as that of the "retired clergyman whose sands of life have about run out."

But not until we reach the age of the magnetizers is the matter sufficiently divorced from religious dogmas to admit of its being handled critically without provoking the cry of sacrilege, which cry could penetrate more nearly to the marrow in those days than it can now. Hitherto, whether under Pagan, Christian or Moslem rule, the matter has been so securely hedged about by religious scruples, blindness and intolerance, that the philosophic mind dared not peep, or, if it did, it dared not proclaim what that peep disclosed, unless it were in perfect consonance with orthodox teachings. How completely the mind was manacled may be instanced by the case of Mondeno, who dissected every part of the human form, but quailed at the prospect of eternal perdition should he enter the home of the soul, the skull, and thus commit the "unpardonable sin."

When the phenomena of healing without the means of medicaments began to appear, independent of the ministrations of priests and outside the proper sanctuary of the church, then the inheritors of the learning of the philosophers began to investigate, and proclaim the results of their investigations.

Accordingly, about the time that alchemy began to lose its hold upon the minds of men, a new wonder arose. Some say that the father of it was Paracelsus, who was a shining light among the alchemists, and the probable founder of the Brotherhood of the Rosy Cross. He had spent years in the far East, seeking for the Mount of Adamant, the Philosopher's Stone, that would arrest decay and restore the bloom and rounded outline of youth to the wrinkled visage of old age. He brought back with him the crystal azoth, and began a career that illustrates most painfully the pitiable delusions into which the human race may be led. According to this authority, the wonderful stone had magnetic qualities sufficient to cure all spasmodic disorders, including epilepsy and hysteria (particularly the latter, one fancies). Like all discoverers of his class, he despised the help that slow, plodding labor had accumulated, and built his superstructure upon his own foundation. He publicly burned the works of Galen, and declared that there was more wisdom in his shoe-buckles than was to be found in those volumes. Did Paracelsus live in the present age, he would most unhesitatingly be denominated a crank, but his strong personality, his physical courage, his peculiar eloquence, his travels, his intercourse with the mystics of Persia and Arabia, his scrap learning in all departments, his contempt of all authority, with which the populace seem always to sympathize, peculiarly fitted him to become the apostle of one of the most fascinating delusions with which humanity has ever been afflicted.

He was the first of the mineral magnetizers, just as Mesmer was the first of the animal magnetizers. He gave very precise and comprehensive directions for the preparation of his wonderful magnet, by means of which diseases were to be transplanted from the human system through the medium of seed, which, as he quaintly expresses it, "have a congruity or homogenity to the seeds of the disease." Says this eminent authority: "These being sown in a pot and afterward transplanted to the ground do cause the disease to decrease as they sprout and grow into plants, and when they have arrived at full growth the disorder disappears altogether."

Of a like sovereign efficacy is a recipe once communicated to the writer by an old man, who assured him that he had seen it tested so often that to disbelieve were to show one's self impervious to possibilities of conviction. The recipe was warranted to cure "fits in children." "Take," said my authority, "a young hickory sapling about ten inches in girth, split it as it stands, force it apart with gluts until sufficient width is obtained, then pass your 'fitty' child through the aperture thus made, knock out the gluts, and when the sapling grows up again the child will be well." This will hit nine times out of ten, for it will take two or three years for the sapling to heal. In the meantime the child will have cut its teeth, its digestive organs will have developed more perfectly, and the cause of the fits will have been removed.

Paracelsus also discovered the wonderful "weapon salve," once devoutly believed in by thousands, and whose virtues have been embalmed in the Lay of the Last Minstrel. Happily its mode of preparation has been preserved for us. It is as follows: "Take of moss growing upon the head of a thief that has been hanged and left in the air, of real mummy, of human blood, still warm, of each one ounce; of human suet, two ounces; linseed oil, turpentine and Armenian bole, of each two drachms. Mix all well in a mortar, and keep the salve thus made in an oblong, narrow urn." This salve, its learned discoverer declared, would "cure the hurt of any sharp instrument, provided the heart, the brain or the arteries had not been penetrated, and provided, also, that the weapon that had made the wound was carefully anointed with the salve according to instructions.

While the weapon salve was being thus employed the wound itself was to be washed each day with "fair, pure water, covered with a clean, soft linen rag, and opened once a day to cleanse off purulent matter."

In specifying the kind of wounds that might not be helped by the weapon salve, the learned surgeon shows a knowledge of physiology and of his art equal to any of his time. In directing how the wound itself should be treated he shows a fair conception of the value of antisepsis. It is needless to say that in its day no surgical appliance was supposed to possess such virtues as the weapon salve, nor did any yield such uniformly good results.

Was this man the self-conscious imposter he is supposed to have been? No. He represents fairly the times in which he lived. His mysticism, his juggleries were the result of overshadowing superstition, born with him, taught to him with every particle of learning that he received at the feet of the instructors of those times. His gleams of genius, his broad common sense in many things, were parts of the natural man himself. Do not forget that he was the first to herald the virtues of mercury, and probably the first to bring opium from the poppy fields of the east, and employ it in the alleviation of pains and insomnia.

One Dr. Fludd, or a-Fluctibus, as, after the fashion of the learned men of his time, he called himself, had the honor to introduce the renowned weapon salve into England, where it achieved miracles in the healing of wounds, while the good doctor did as much for other maladies by means of the magnet. He, however, defined more clearly the sphere of action of the latter by saying that, like the earth, man has a south and a north pole, and that magnetism could only be applied successfully when the body was in a boreal position. Like all other great reformers, he was the subject of detraction and persecution. Not because he was teaching and practicing something that was false and delusive, but because he was supposed to have purchased his knowledge from the arch enemy himself, and at the usual price. One Parson Foster was the most active of his assailants. This truly pious individual attacked him with a pamphlet entitled "Hyplocrisma Spongus, or a Sponge to Wipe Away the Weapon Salve." In this the good parson declared that the devil himself had given the salve to Paracelsus, he to the Emperor, the Emperor to Baptista Porta, and he in turn to Dr. Fludd, "who," the learned pamphleteer declared, "is yet living and practicing physic in the famous city of London, and must stand tooth and nail for his sorceries." The reverend essayist further said, "to use such an unguent, or cause it to be used, was as bad as witchcraft, and in the last day the devil would seize upon all that had given it the slightest encouragement."

The learned doctor replied with proper spirit. His reply was entitled, "The Squeezing of Parson Foster's Sponge, Wherein the Sponge-bearer's Immodest Carriage and Behavior Towards his Brethren is Detected; the Bitter Flames of his Slanderous Reports are by the Sharp Vinegar of Truth Corrected and Quite Extinguished; and, lastly, the Virtuous Validity of his Sponge in Wiping Away the Weapon Salve is Crushed out and Clean Abolished." But about this time Dr. a-Fluctibus began to find his claims upon public attention neglected for those of a much more remarkable individual. This was Sir Kenelm Digby, son of Sir Everard Digby, who had lost his head in quite a different manner in consequence of complicity in the famous Gunpowder Plot. Sir Kenelm Digby, was, by all accounts, an accomplished scholar and an able man. It appears, however, that nothing was too rank for his credulity. He was an alchemist, believed in the philosopher—Stone, urged Descartes to devote his energies to the discovery of the elixir vitea and gave his wife a dish of capons that had been fed upon vipers, in accordance with instructions laid down by Arnold de V'illeneuve, in order that her beauty might be preserved for a century. In his hands, however, the now familiar weapon salve underwent a metamorphosis, being changed from an unguent into a powder, called by him the "Powder of Sympathy." He obtained his knowledge of its virtues from a Carmelite friar, who had received his at the hands of an oriental philosopher of great renown whom he had met in Armenia or Persia.

Sir Kenelm reckoned among his disciples, no less personages, than the wiley old James VI himself, whose fox-like cunning nosed out the Gunpowder Plot. The Prince of Wales, afterward Charles I, studious, grave, suspicious, not lacking in penetration, but too vacillating to cope with the exigencies he was afterward called upon to encounter. There was also Buckingham, the consumate courtier, who, if all his traits had been consistent with each other, ought not to have believed in anything, certainly in nothing so improbable as the powder of sympathy. Besides these notables, there was a host of others, comprising some of the chief nobles and scholars of the land.

If it were not adding to a paper already too long, the writer would like to give a synoposis of a paper read by Sir Kenelm Digby to a society of learned men at Montpelier. It gave in elaborate detail a history of the case of Mr. James Howell, the author of Dendrologia, who received two considerable wounds while endeavoring to part two of his friends who were fighting with swords. The wounds were completely healed in five or six days by Sir Kenelm's art, and that without the direct application of any of the means ordinarily employed. The primary bandage alone was the subject of certain ablutions, while the patient was in another house and wholly ignorant of the fact that any such were in progress. About this time, however, a new phase was given this peculiar method of healing through the agency of one Valentine Greatraks, the son of an Irish gentleman. He was a young man of rather melancholy temperament, who, from brooding over his own ills, real and otherwise, began to awake to a perception of a mysterious impulse, coming from he knew not where, which impelled him to try his hand at healing the king's evil, now known as scrofula.

Before setting forth upon his divine mission, Greatraks laid his commission before his wife, who, with remarkable sagacity as well as great candor, told him that he was a fool, in which just verdict, with all the facts before it, posterity most heartily concurs.

Evidently the great majority of people with whom he came in contact thought differently. Unconsciously, the new apostle gave a mortal blow to the theories of Sir Kenelm and Paracelcus. He wrought the same apparent cures as did these two worthies without so much as mentioning the magnet, the weapon-salve or the powder of sympathy. His first attempt was quite successful, and from healing the king's evil he soon felt impelled to attempt all manners of diseases. So famous did he soon become that all the county of Cork was soon in commotion. His house and grounds were thronged night and day; so much so that he could scarcely find time to eat, sleep or renew his acquaintance with his family.

He removed to Youghal, in order that those seeking his aid might be more amply sheltered and fed. Such a multitude flocked to him here, not only from his native country, but from England as well, that the magistrate became seriously alarmed lest some great plague should arise, in consequence of so many diseased people being brought together. His method of healing now assumed another phase, in consequence of the impossibility of stroking and praying over so many people. He declared that he had only to touch the afflicted with his gloved hand, and healing virtue was communicated. His presumption now became a little too much for the church to endure, and it ordered him to desist from the exercise of those functions which belonged only to those who had received this gift of healing in the orthodox way. The great healer disregarded; the church anathematized, but its curses, once so potent, were drowned in the acclaim of the mob.

Greatraks soon saw the necessity for a larger field, and accordingly went to London, where he was found by many who sought him in apartments in Lincolns-Inn Fields, sometime in the reign of James VI. The glimpses we get of him here, with his peculiar simplicity of character, boyish enthusiasm, uncouth manners, readiness to exhibit his powers before powdered wig and farthingale, is highly curious and entertaining. While Greatraks was furnishing a sensation to London society, other magnetic healers were springing up as rapidly, and in such numbers, as the fruit of Cadmus' sowing.

Francisco Bagnone, in Italy, was performing the same wonders, notwithstanding the disfavor of his holiness the Pope. When Baptista Porta gave some extraordinary proofs of his powers in the magnetic line, the Holy Church could not contain itself longer. It proclaimed him a magician, and ordered him, under the pain of instant and irrevocable damnation, to cease the exercise of his infernal art.

It is not the purpose of this paper to review the works of even the most conspicuous of the magnetizers; its object will have been accomplished if the gradual evolutions of the matter from material agencies to immaterial, from a belief in an extraneous source to a self-source. will have been demonstrated. Singularly enough, down almost to the time of Mesmer, there seems to have been but little question of the actuality of the manifestations. On the other hand, there seems to have been a tacit acknowledgment of it, and the assailants of the magnetizers and their works became so from a conviction of an infernal origin of the art, and solemnly warned the public against its employment, assuring it that, like fairy-gold, it would prove a curse, in the end, to those who were apparently benefited. On the other side of the question were arrayed such names as VanHelmont, Sebastian Wirdig, William Maxwell and Dupotet, whose examinations and expositions, however, in spite of their belief, but served to drive the phenomena within constantly narrowing bounds. Thus Father Hell, professor in the University of Vienna, found that the magnet of Paracelcus and the powder of sympathy were unnecessary, and that the same cures could be accomplished by means of certain steel plates which he himself had invented.

A little later, Mesmer discovered that none of these devices were necessary, but that the hands carried down along the trunks of the great nerves served to produce the magnetic state so conducive to restoration to public health.

This man who gave his name to a certain phase of magnetic healing, so-called, was perhaps the most remarkable of all its apostles since Paracelsus himself. He was born in May, 1734, in Mersburg, Swabia, and studied medicine in the University of Vienna, receiving his degree in 1766. The subject of his graduating thesis showed, even at that early period in his life, his mental bias. It was entitled "The Influence of the Planets upon the Human Body." He declared in this thesis that "the sun, moon, and fixed stars mutually affect each other in their orbits; that they cause and direct in our earth a flux and reflux, not only in the sea, but in the atmosphere, and affect in a similar manner all organized bodies, through the medium of a subtle and mobile fluid which pervades the universe and associates all things together in mutual intercourse and harmony." He further said that this influence was exercised in a marked degree upon the nervous system of man, where it produced two different states, accordingly as the influence waxed or waned. These two states he characterized as those of "intension" and "remission," which he said accounted for the different periodical revolutions observable in many disorders.

He associated himself with Father Hell, whose name is not nearly so suggestive in his native tongue as it is in ours. They quarreled over the ownership of the steel plates before-mentioned, and separated.

Not long after their separation Mesmer discovered that they were not indispensable to the accomplishment of the magnetic state. While experimenting upon the person of one Mademoiselle Oesterline, he discovered not only that the plates were not necessary, but that all substances possessed magnetic qualities, with the power to produce intension and remission—the human body more notably than any other substance. His cure of the young lady in question of some convulsive disorder (a *petit mal*), probably hysterics, confirmed him in his newly conceived notions, and so his theory was now complete.

He soon communicated his discoveries to all the learned societies of Europe, soliciting investigation. With but one exception these treated his announcement with silent contempt. The Academy of Science at Berlin, however, answered him, but the terms of its reply were anything but flattering. The city of his alma mater, also, turned a cold shoulder to his discoveries, and he found himself compelled to seek honors and emoluments elsewhere.

He traveled through his native Swabia and Switzerland. While in the latter country he encountered one Father Gassner, who was casting out devils and healing the sick by the laying on of hands. The good father, it seems, was without a proper knowledge of the source from whence he derived his powers, ignorantly ascribing them to divinity direct. Mesmer, after showing him that he could do the same things, instructed him in the beauties of intension and remission, and sent the good father forward rejoicing in a clearer perception of the relation and harmony of all things within the universe.

Having achieved some fame abroad Mesmer returned to Vienna, but still the obdurate city would not receive its prophet to honor. After a short residence in that city he shook its dust from his feet as a testimony against it. This was partly on account of an uncomfortable notoriety he had acquired through his connection with a certain notable case. He undertook to cure of blindness one Mademoiselle Paradis. After the proper manipulations he declared her sight restored. An eminent oculist, Barth by name, examined the patient and declared her condition unchanged.

No candid student of Mesmer can agree with the common verdict, viz: that he was a self-conscious imposter. Not one of the many upon whom he practiced was so deluded as himself. Everywhere he went he challenged investigation at the hands of savants and doctors of medicine. He wrote letters to all the learned bodies of Europe, soliciting an examination of his theories and the results of his manipulations. He seemed to hope that these might help him extend the boundaries of knowledge in this direction and make his art still more useful.

His enthusiasm, his dauntless energy and perseverance in overcoming almost insurmountable obstacles, show him to have been sincere.

His fame preceded him to Paris, and when he went there he found a soil ready prepared to receive the seed of the new doctrine. This was in 1778, when, perhaps, more than at any other period of her existence, that city was given up to luxury, idleness, sensation seeking and all the vices whose exaggeration and excess serve, like "Mother Carey's Chickens," to portend the approaching storm.

His first convert of note was a physician of great reputation named D'Eslon, who was of great assistance to him in the prosecution of his work, but who was the indirect cause of its overthrow, as we shall presently see.

Mesmer now began to bring to his aid other means of enchaining the senses. He procured him spacious apartments, whose rich appointments were dimly illumined by light that streamed through richly stained glass. The atmosphere was redolent with the odor of rare flowers. Soft strains of music breathed fitfully from mysterious recesses, and the vapor of costly incense rose and fell upon the palpitating air, while at a distance, which the imagination prolonged to the uttermost, and at long intervals came the tones of an exquisitely modulated human voice singing some divinely sweet refrain.

Amid these highly sensuous surroundings and in a wide circle about the "banquet" were seated the patients to be operated upon. Their hands were interlocked and their knees touched. They were waited upon by young men, the finest types of physical manhood that Mesmer could procure. In the dead silence which the rules of the house imposed these young men began to manipulate the patients. They rubbed them down the spine and along the course of all the great nerve trunks, staring them steadfastly in the eye all the while. Soon the female portion of the circle became convulsed and wept or laughed immoderately. When the excitement had communicated itself to the other members of the circle, and had reached its greatest hight, Mesmer himself appeared upon the scene. Nature had done much for him in the matter of personal appearance, but he summoned to her aid a rare art. He appeared clad in full flowing robes of lilac-colored silk embroideried with gold flowers. Upon his head was a tall, straight, brimless cap, like that worn by the Magi of Persia. In his hand he carried a white wand, with which he made certain motions as he advanced. His step was slow and majestic, his glance at once penetrating and severe. He passed his hands lightly over the foreheads of his patients, and with his wand traced certain fantastic figures over their chests and abdomens. Such as had passed into insensibility roused out of their stupor; those that were still convulsed were awed into quietude. All admitted his power, and confessed that they felt streams of cold or burning vapor passing through them, according as he waved his wand or fingers before them.

His experiments produced upon the Parisians the greatest sensation they had yet enjoyed. Mesmer's name was upon all tongues, and the public press groaned with pamphlets for and against him. The priesthood declared him an emissary of the devil, a spiritual descendant of Simon the magican, and Elymas the sorcerer. The physicians and savans proclaimed him a shallow imposter. The masses swore by Mesmer, and cried "have at them" in all his controversies with all the learned bodies of Paris.

The Academy of Medicine, of Paris, took strong grounds against Mesmer and his art. At the solicitation of D'Eslon, Mesmer sent a challenge to the Academy; the conditions were these: The Academy and Mesmer jointly were to select twenty-four patients; twelve were to be treated by the former, and twelve by the latter. The King was to be asked to appoint twelve persons, not physicians, to act as judges, and to decide which plan of treatment appeared to yield the most positive and at the same time beneficial results. The Academy for its own reasons declined the challenge, and the public grew quite jocular at its expense.

It is noteworthy that the unfortunate Marie Antoinette was an enthusiastic supporter of Mesmer and his doctrines. The King offered him the cross of St. Michael and twenty thousand francs if he would demonstrate that he had made a discovery in medicine and would communicate it to physicians nominated by his Majesty. Mesmer declined to appeal any further to his natural enemies, the physicians, and shortly thereafter quitted Paris, but left behind a very worthy representative in the person of D'Elson, whom the Academy ordered to either renounce his heresies or forfeit his membership in the body. So far from doing this, that worthy challenged the faculty to an investigation of his doctrines and methods. Coming as it did from one of its own members, this was a challenge which the faculty could not afford to ignore. Accordingly a joint commission was appointed representing the Faculty of Medicine and the Academy of Sciences. The appointment was made the 12th of March, 1784. Among the noted names from the last named body are those of Lavisier, Bailly, and our own Franklin.

The report of the commissioners was drawn up by Bailly himself, and reflects the perfect candor and justice of that rare but unfortunate man. After declaring the means used to produce the so-called magnetic state he speaks of the results as follows:

"The patients in their different conditions present a very varied picture. Some are calm and tranquil, and experience no effect. Others cough, spit, feel slight pains, local or general heat, and have sweatings. Others, again, are agitated and tormented with convulsions. These convulsions are remarkable in regard to the number afflicted with them, as to their duration and force. As soon as one begins to be convulsed several others are afflicted. The Commissioners have observed some of these convulsions to last more than three hours. They are accompanied by expectorations of muddy, viscous water, brought away by violent efforts. Sometimes streaks of blood have been observed in the fluid. The convulsions are characterized by precipitous involuntary motions of all the limbs, and of the whole body, by contractions of the throat, by the dimness and wandering of the eyes, by piercing shrieks, by tears and immoderate laughter," and so on through the entire category of nervous manifestations. The learned commissioners noticed that always at these seances there were a great many women and but few men. These experiments continued for five months, at the end of which time the illustrious Bailly drew up the report, which was signed by all the commissioners. The report was clear, concise, impartial, just and accurate throughout, a perfect reflex of the man who drew it, and who stood too much in the presence of the eternities to be either narrow or prejudiced. After detailing the various phenomena presented, the report concluded by saying, in effect, that the only proof adduced of the existence of such a principle as animal magnetism is the effect produced upon the human body; that these effects can be produced without passes or manipulations; that all manipulations, passes and ceremonies never produce any effect at all if employed without the knowledge of the patient; therefore, imagination does, and animal magnetism does not, account for the phenomena.

It is scarcely necessary to say that in learned circles the interest in Mesmer and his art began to decline immediately upon the publication of this report. It seems that during the time occupied by the experiments Mesmer was again in Paris, but shortly after the publication of the report he quitted Paris never to return. He carried away with him a considerable sum of money, and also a greatly diminished reputation. In the results of this investigation we see how all similar delusions should be dealt with.

Let physicians and learned men everywhere present themselves at the clinics of the magnetizers of to-day and publish to the world the results of these investigations. Mesmer died in 1815, and with him died the chief apostle of his creed. Henceforth, as it progressed in evolutions, it was constantly throwing off the old garments with which superstition had invested it.

In certain circles interest to some extent was again rekindled through the agency of that prince of charlatans, the so-called Count Cagliostro, whose presence and popularity in Paris at about the beginning of the bloody revolution, speaks volumes for the decay of government and society generally, which not only tolerated this man, but thronged his levees, as though he had been some great potentate.

Far different types of men were the Chevalier de Barbarin and the Marquis de Puysegur; but the fields of their operations were elsewhere. The latter chose his in the precincts of his estate at Busancy, the former the then provincial city of Lyons.

Barbarin demonstrated what Bailly had proposed, viz.: That passes, manipulations and ceremonies were not necessary in order to produce the magnetic state. The former found that he could induce the state just as readily by simple effort of his will.

In our own time mesmerism has lost its chief significance. It no longer claims our attention as a means of healing the sick. It challenges notice simply as presenting something at once curious and diverting.

It may be truly said that when the world wrests something from the mysteries that proves of use to itself it never losses it, but it becomes a part in the sum total of human knowledge and helpfulness. It is therefore significant, after all the commotion produced by the magnetizers and their art, that there remains nothing that may be counted as gain. Like the hydra, however, this thing has of late been sprouting new heads, sickly and feeble enough when compared with those of old, but still requiring the surgery of a sharpened blade. These heads may be labeled, "Psychic Medicine," "The Mind Cure," "The Christian Science of Healing."

It is singular to note how the jargon of the latter corresponds to that once used by M. Deleuze in his Critical History of Animal Magnetism. He says: "In order to bring yourself under the magnetic influence, observe the following rules:" "Forget for awhile all your knowlege of physics and metaphysics. Remove from your mind all the objections that may occur to you. Imagine that it is in your power to take the malady in hand and throw it on one side. Never reason for six weeks after you have commenced the study. Have an active desire to do good, a firm belief in the power of magnetism, and an entire confidence in employing it. In short, repell all doubts, desire success and act with simplicity and attention."

The various sects which the writer has just mentioned employ identically the same ideas, yet couch them in a phraseology suited to the times, and the peculiar beliefs of the people upon whom they propose to work.

Matter to them is but a picture of the sense, and has no actual existence. Nothing exists but spirit. The human body, with its various organs, is material; therefore, non-existant in the true sense and utterly incapable of sensation Disease is therefore an aberation of spirit, which refers its own disorders to certain parts of the body, and suffers under the delusion that there is the seat of the disorder.

All that is necessary, therefore, in order to realize a cure is to be firmly persuaded of these facts and act accordingly.

Belief in God and the non-existence of matter is enjoined. Utterly refuse to believe that there is any disorder save in the nice adjustments of all the spiritual parts, whose harmony may be restored by perceiving the true seat of the disorder and its character and by exercising the higher spiritual powers to its extinguishment. One other tenet they teach which is not quite so inocuous. It is contained in a prayer which is designed for use by all who profess belief in the doctrine. In that the believer promises his creator that he will not do him such discredit as to think or say that he is otherwise than well. Any statement touching his bodily condition that may be made by one of this sect must therefore be received *cum grano salis.*

Who are these sectaries, what is their object, and what are they doing? are questions that readily occur to one.

To the first question the writer answers there are three distinct branches in the United States. The first branch is one that professes to found itself upon Christian doctrine alone, at the head of which is one Mrs. Eddy, the president of the so-called Metaphysical College located in the good old, witch-hating State of Massachusetts. In this institution I am told the student may have imparted to him this truly divine art of healing in a short space of time for and in consideration of Eight Hundred Dollars to Mrs. Eddy paid. Mrs. Eddy is the author of a book called the "Christian Science of Healing," which this writer has had the temerity to peruse, but without gleaning much information as to the basic principles of said science. The sect of which this lady is the acknowledged leader is probably the most numerous of any in this country, and this because of the appeal that it makes to the religious element, whose ready response in many instances, evidences a want of Bible knowledge that is not creditable to the parties concerned. This sect disregards all drugs and the ordinary appliances of therapeutics as altogether heretical, and tending to destroy that faith that should fix itself alone upon the source of spiritual being, and comprehend in its grasp the true relation of matter and spirit. It may be supposed that when the faith is so fixed and the attention drawn away to the intangible but all absorbing, the manipulator has but little trouble to ease the aspirant's pockets of that which is declared to be the root of all evil, and that but serves to weigh down the pinions that would else expand themselves in flight.

Dr. W. F. Evans represents still another phase of the idea. He bases his doctrines upon the teachings of Bishop Berkely, Fichte, Schelling, Kant and Hegel, transcendentalists all. It is easy to perceive that he must have a large following in Boston, and be much patronized by such as have a smattering of metaphysics and a cyclopaedic knowledge of the above worthies. Of the other branch the writer has been able to obtain but little information. But enough is known to show that it differs but little from the ones just named.

As to the second question, what is their object? a writer naively answers by writing an "S" with two straight marks drawn through it. He proceeds to prove his case by showing that there is a system of fees extending down the line from the threshold of the "college" to that of the patient who receives "treatment;" and that these fees are always in amount respectable, sometimes preeminently so.

As to what they are doing, the writer confidently affirms, in the light of the studies he has made, of which this paper is but a feeble digest, that they are consciously or unconsciously trying to rehabilitate the defunct ideas of Paracelsus and Mesmer, and, at the same time, persuade for a season the victims of hysteria and hypochondria that they are as well as other people.

Do they cure disease? The writer answers no more than did Paracelsus and Sir Kenelm Digby. The physician of to-day can speak more confidently upon this last head than could his brother, cotemporaneous with the worthies just mentioned. He of to day has at his fingers' end the results of the labors of Rokitansky and Lanæck. Diagnosis and Pathology speak in no uncertain terms upon most maladies. The sectaries can scarcely pursuade the educated physician of to-day that any exercise of the Christian Science of Healing can restore to their normal condition lungs that have been thoroughly infiltrated with tubercle, a heart that has undergone fatty degeneration or whose valves have lost their nice adjustment by reason of calcareous deposits, kidneys whose tubuli have sloughed out in consequence of inflammatory action; but why prolong the list?

Is there nothing at all in this matter? I answer, yes, there is probably a residue of truth in it. An art or a practice which has none at all is not at all dangerous. How this residue of truth may be utilized does not appear.

The magnetizers, in their day, were reputed to have performed many marvelous cures. Who made the diagnosis, and what was the subsequent history of these cases, are pertinent questions—questions which, however, can not now be answered, though the answer may be inferred from the fact that the art by which the magnetizer wrought those supposed cures has died a natural death. Not so the positive means of therapeutics. The world has never, since their introduction into the pharmacopœia, forgotten that cinchona will cure an intermittent, and opium allay pain.

There is a class of maladies, however, in which the lesson taught by the magnetizer may prove of value. They are such as frequently baffle the skill of the physician because, search as he may, he can yet find no adequate cause for the symptoms manifested. I mean the disorders known as hysteria and hypochondria.

There are two grand divisions of the nervous system, the cerebro-spinal and the ganglionic, or sympathetic. The latter serves to bind all the organs together in mutual harmony and sympathy, while the former, besides furnishing sensation and motor impulse, presides over the whole, and keeps all in equilibrium.

In a perfect state of health there is no consciousness of any organ. The mind knows not by their operation if there be any stomach or heart. By means of their interlacing fibers the organs telegraph to the brain in unison the message "at work" and receive the assurance thence "all is well." It occasionally happens, how, has never been explained, that this constant intercommunication is interrupted, the organism falls into a state of perturbation that manifests itself in all sorts of morbid sensations, very frequently simulating true pathological conditions. Should the mind become so weakened as to occupy itself with these, they become intensified out of all proportion to their significance. It is characteristic of this condition, that the most careful examination fails to find anything that would warrant the apparent amount of perturbation present; the pharmacopœia furnishes nothing that will afford permanent relief.

Accordingly the experienced physician has learned to endeavor to excite in the mind of the patient a train of ideas, opposed in character and sufficiently strong to abolish the old ones.

It can readily be seen, therefore, that the art of the so-called "magnetizers" and healers may be made to serve a useful purpose were its exact sphere once determined. But wedded as it is to theories and practices that are calculated to lead some minds astray and still further weaken the understanding, the results of its employment must in the end prove pernicious.

Many lives have already been lost in consequence of hearkening to the delusive overtures of these sectaries, and so frittering away the time, which is so valuable in the treatment of some maladies. Others have been sent to the mad-house in consequence of being lead by will-o'-the-wisp ideas to the utmost confines of legitimate speculation, beyond which lies the land of chimeras and madness. It is then our duty as sanitarians to deal with this source of hurt also, but always in the spirit of Bailly. Once dealt with in this way, it will trouble no farther.

SANITARY ENTOMBMENT—THE IDEAL DISPOSITION OF THE DEAD.*

BY REV. CHARLES R. TREAT, OF NEW YORK.

It is a strange thing that the time should have come to attack the churchyard in its use for the burial of the dead; but it is really far more strange that the churchyard should have come to be one of man's most deadly foes. This, however, every thoughtful man will now have to admit to be true, and this will make easy what otherwise would have been impossible for a tender or reverent mind.

As a general statement, it will suffice to quote the words with which Lord Beaconsfield denounced the churchyard, in the House of Lords, in 1880: "What is called 'God's Acre' is not adapted to the times in which we live or to the spirit of the age. The graveyard is an institution prejudicial to the public health; and the health of the people ought to be one of the considerations of a statesman. The time has arrived when a safer disposition of the dead should be instituted."

In view of such a statement, and of many more that come readily to mind that have been made in stronger terms, and most of all in view of the fact that the agitation against the churchyard has been maintained for more than a hundred

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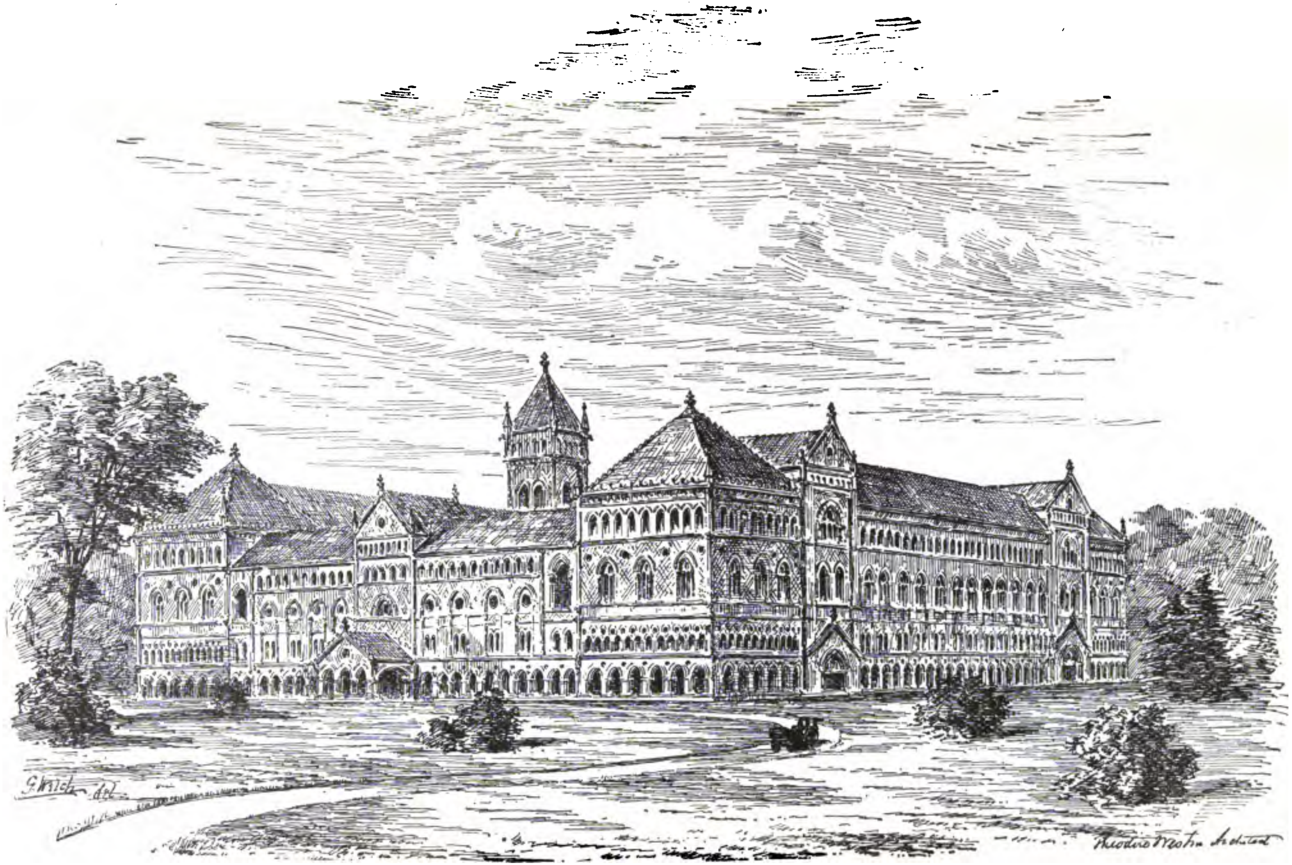
*Address elaborately illustrated by stereopticon, before the American Public Health Association, at Brooklyn, N. Y., October 23, 1889.



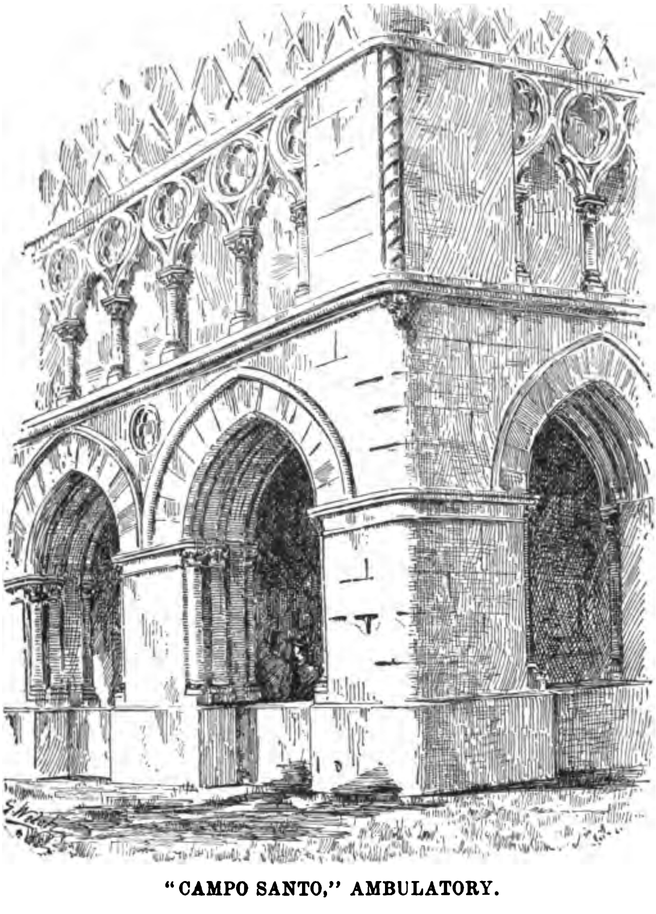
"CAMPO SANTO" FOR NEW YORK.

years, it is amazing that this use should die so hard; and, as we survey the past, it will amaze us more, to be compelled to confess, that the churchyard has been made man's foe by civilized and Christian men! The story of this use of consecrated ground is so short that, although familiar, it may well be told again.

In the early Christian centuries, as in the centuries preceding, among men of all religious beliefs and practices, the conviction, both instinctive and founded on experience, prevailed, that the dead should not be brought into proximity with the living. Accordingly the practice definitely demanded by the "Twelve Tables" became universal, not to bury within a "city" or any group of human habitations. The first step in the wrong direction seems to have been taken at the dying request of the first Christian emperor, who was interred at the entrance of the Church of the Holy Apostles, in Constantinople. The tendency, however, to follow this example, and to secure similar interment in holy earth, was stubbornly resisted; and it was not until the latter part of the sixth century that burials were permitted within towns or cities, and it was not until the eleventh century that burrials were permitted in churches. From this time the custom continued without notable interference, until the latter part of the last century. Then, in that era of tremendous change, the churchyard did not escape. In Paris, the churchyard of the Church of the Holy Innocents was first condemned in the interest of the public health, because much sickness had been trâced to the foul stenches that rose therefrom; and it is worthy of special notice, as indicating the extent of the danger, that M. Thouret, the official charged with the duty of disinterring the dead, was overcome by the foul air that he was compelled to breathe, and barely escaped with his life from a putrid fever that he there contracted. A little later the grounds about the churches of St. Germain des Pres and St. Eustache were also barred from burial, and the contents of their graves were carried to the quarries that have since become the "Catacombs" of Paris. In Austria, under Joseph II., the ruler of such unhappy methods but of such noble aims and advanced ideas, the burial of the dead within or near to churches was prohibited by law, and this was such an honest enactment that neither rank nor wealth could evade it.

In England, unhappily, the progress of this reform was not so rapid. Bishop Latimer had soundly said, in a discourse upon the restoration to life of the widow's son at Nain: "The citizens of Nain hadd their buryinge-place withoute the citie, which no doubt is a laudable thinge. And I do marvel that London, being soe great a citie, hath not a burial-place withoute. For no doubte it is an unwholesome thinge to bury within the citie, especiallie at such time when there be great sicknesses and many die together. I think verilie that many taketh his death in St. Paul's churchyard. And this I speak of experience, for I myself, when I have been there some mornings, to heare the sermons, have felt such an unwholesome and ill-favoured savour that I was the worse for it for a while after, and I think no lesse but it is the occasion of great sicknesses and disease." And it is deserving of mention that Sir Christopher Wren entreated the citizens of London, in rebuilding the city after the great fire of 1666, to put an end to the pernicious practice of burying within their churches and about them, and even within the limits of their city. But these appeals, and many more that were more urgent and more recent, were vain, and it was not until nearly the middle of our proud century that England would listen to the reformer of this crying evil.

In this country, partly because there were few places of large population, and partly because it was an early and general tendency to use cemeteries rather than churches and the grounds adjacent to them, the evils of earth-burial did not manifest themselves so soon or in so marked a manner as in the old world. But there



"CAMPO SANTO," AMBULATORY.

were instances enough to convince the most incredulous that a radical change must be made. Dr. Ackerly, writing in 1822, thus describes the condition of the burial ground connected with Trinity Church, New York, forty years before: "During the Revolutionary War this ground emitted pestilential vapors, the recollection of which is not obliterated from the memory of a number of living witnesses." In the same year the *Commercial Advertiser* published an article in reference to the present evils of earth-burial at the same place, in which it was said: "It will be remembered that the graveyard, being above the streets on the west and encompassed by a massive stone wall, and the east side being on a level with Broadway, it results that this body of earth, the surface of which has no declivity to carry off the rain, thus becomes a great reservoir of contaminating fluids suspended above the adjacent streets. In proof of this it is stated that, in a house in Thames street, springs of water pouring in from the ground occasioned the removal of the tenants on account of their exceeding fetidness." At a later date Dr. Elisha Harris brought this telling indictment against the same place of interment: "Trinity churchyard has been the center of a very fatal prevalence of cholera, whenever the disease has occurred as an endemic near or within a quarter of a mile of it. Trinity Place west of it, Rector street on its border, the streets west of Rector, and the occupants of the neighboring offices and commercial houses have suffered severely at each visitation of the pest, from 1832 to 1854." It seems hardly necessary to add that the foregoing statements are not intended to make the impression that there was a worse condition at the churchyard named than at any other . . The truth is, that this only illustrates what was universal throughout the city; and in proof it may be cited, among the unsavory recollections of the time, that the sexton of the "Brick Church," Beekman street, was accustomed to caution the persons standing near when a body was to be deposited in the vaults, saying: "Stand to one side. You are not accustomed to such smells!" And the sexton of the Dutch Church, close by, was known to have said that, when going down into the vaults, the candles lost their lustre, and that the air was "so sour and pungent that it stung his nose." Naturally, therefore, it was noted in the public press: "This being the case with all the vaults where dead bodies are deposited and subject to be opened at all seasons, this method of disposing of the remains of our friends is at least an unpleasant and certainly a dangerous one." And the result was to be expected, that the Board of Health should utter their official protest against the continuance of the perilous practice, as they did in 1806: "Interment of dead bodies within the city ought to be prohibited. A vast mass of decaying animal matter, produced by the superstition of interring dead bodies near the churches, and which has been accumulating for a long time, is now deposited in many of the most populous parts of the city. It is impossible that such a quantity of animal remains, even if placed at the greatest depth of interment commonly practiced, should continue to be inoffensive or safe!"

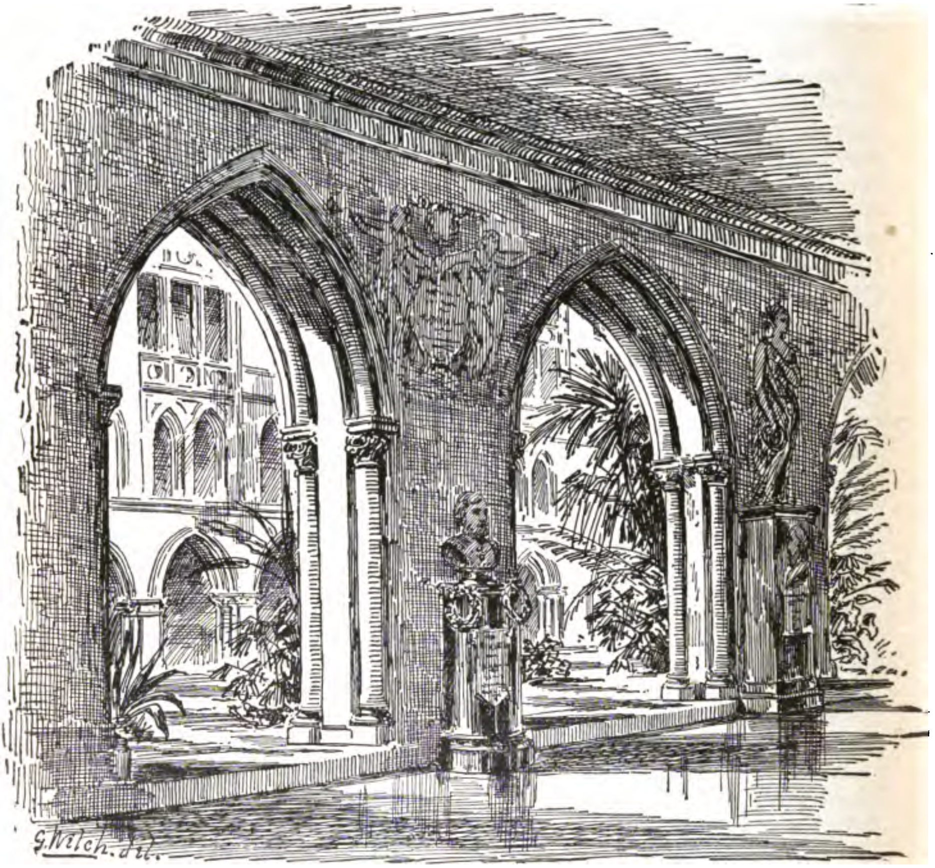
It may now be said: "Yes, this is all true, but we have changed all that! We no longer inter our dead in church-yards or burial grounds within the limits of cities. We have provided cemeteries at great distances from our cities and large centers of population, and there the dead can do no harm."

To this the reply is easy and convincing, that, if the dead endanger the living when the population is dense, they certainly also endanger them when the population is sparse. The danger is only diluted. It still exists, and it ought to alarm us just as truly when a few are imperiled as when many are. As lovers of our kind, as claiming to be humane, we can no more be indifferent to the danger of a few than to the danger of many. True philanthropy has no sliding scale by which to guage her gifts. And if the evils of earth burial issue from the fact that a lifeless body is buried in the earth, then these are not escaped, and can not be, unless the dead are buried at such a distance from the living that the living can never come into contact with the earth in which they lie, or breathe the air or drink the water which they pollute. Therefore, the question as to the effect upon human health of our cemeteries can be considered settled in the case of all that are not remote from the habitations or the approach of men; and such cemeteries, as we know, are few, and they are not the cemeteries which lie upon the borders of our great cities.

To strengthen this general position it will be sufficient to quote the familiar but weighty assertion of Sir Henry Thompson: "No dead body is ever placed in the soil without polluting the earth, the air and the water above it and about it;" and the testimony of Dr. Holland, who speaks as the opponent of this reform and the antagonist of Sir Henry Thompson, that the best situated cemeteries may be so mismanaged as to become unsafe; that cemeteries should not be too near dwellings; that they should not be overcrowded; that the soakage from them should be carefully guarded against; and that wells near burial grounds are unfit sources of drinking water; and the declaration of the French Academy of Medicine that the cemeteries of Père-la-Chaise, Montmartre and Montparnasse, once suburban, now intramural, are the cause of serious disorders of the head and throat and lungs, that result in the loss of many lives; and to note the experience of Brooklyn, half-girdled with graves, of which the editor of the *Sanitarian* does not hesitate to assert: "Typhoid-fever is, taking one year with another, increasingly prevalent in Brooklyn, and it is, in our judgment, probably due, for the most part, to sewage pollution of the intensest and most loathsome kind—the seepage of graveyards!"

Thus far this subject has been treated as though the only evil influence that a decomposing body could exert would be through the poisonous character of the resultant compounds. Unhappily, the story is only partly told, and greater dangers remain to be revealed.

Within a few years it has become unquestioned that some of the deadliest diseases that attack mankind owe their origin and propagation to living organisms, and it may yet appear that the field of their operation is far wider than we now think. Not to attempt to tell all that has been ascertained, it will be sufficiently convincing to quote from Sir Henry Thompson's utterance in the *Nineteenth Century*, in 1880: "I state, as a fact of the highest importance, that by burial in earth, we effectively provide—whatever sanitary precautions are taken by ventilation and drainage, whatever disinfection is applied after contagion has occurred—that the pestilential germs, which have destroyed the body in question, are thus so treasured and protected as to propagate and multiply, ready to reappear and work like ruin hereafter for others. * * * Besides anthrax, or splenic fever, spores from which are notoriously brought to the surface from buried animals below and become fatal to the herds feeding there, it is now almost certain that malarious diseases, notably Roman fever, and even tetanus, are due to bacteria which flourish in the soil itself. The poisons of scarlet fever, enteric fever (typhoid), small-pox, diphtheria, and malignant cholera are undoubtedly transmissible through earth from the buried body." That the burial of a body which contains the seeds of zymotic disease is simply storing them for future reproduction and destruction, is amply proven by the researches of Darwin and Pasteur; of whom the former has shown that the mould, or fertile upper layer of superficial soil has largely acquired its



"CAMPO SANTO," CLOISTER AND GLIMPSE OF COURT.

character by its passage through the digestive tract of earth-worms, and the latter, that this mould, when brought by this agency to the surface from subjacent soil that has been used as a grave, contains the specific germ of the disease that has destroyed its tenant.

We may fitly close this portion of the discussion with the conclusion, so strongly stated by Dr. James M. Kellar, in his report to the session of the American Public Health Association, at St. Louis, in 1884, which is far from an overstatement of the truth: "We believe that the horrid practice of earth-burial does more to propagate the germs of disease and death, and to spread desolation and pestilence over the human race, than all man's ingenuity and ignorance in every other custom."

It may now be asked: "Granting that these evils are inseparable from the burial of the dead in the earth or in tombs, what is the remedy? What else can be done?"

To this question not many answers can be given, because the modes of disposing of the dead have always been and must always be few.

Plainly, no such novel mode as casting the dead into the sea will be generally adopted. Plainly, also, the mode of the Parsees, grounded as it is in ancient, if not original, use—to give the dead to beasts and birds—will not become universal. And plainly, also, cremation will not be welcome to the many, free as it is from objection on the score of public health, if a method equally sanitary, and at the same time satisfactory to a reverent and tender sentiment, can be devised.

The inquiry, then, has reached its limit. For, apart from the modes that have just been named, there are no others but earth-burial and entombment; and earth-burial, as we have seen, can not be made sanitary under common conditions. Therefore, if the demands of affection and sanitation are both to be met, entombment is to do it, or it can not be done.

Happily, better than any other method of disposing of the dead that has ever been devised, entombment has met the demand of affection. Never has any other mode so commended itself to men as this. There may have been at times a general adoption of cremation, and there may have been a general prevalence of earth-burial, but the one has not long satisfied the sorrowing survivors, and the other has owed its beginning and continuance to the apparent absence of alternative. Wherever the living have been able, and the dead have been dearly loved or highly esteemed, the tendency to entomb and not to bury has been constantly manifested.

To call attention to this tendency is enough to prove it, so easily accessible is the evidence and so familiar is its operation in the human heart. The most natural reference will be, first, to the Mausoleum, the tomb of Mausolus, that was erected by his sorrowing Queen, Artemisia, at Halicarnassus, upon the Ægean's eastern shore; and that became at once one of the few great wonders of the ancient world. This was intended to do honor to the loved and illustrious dead; and this it did, as no grave or pyre could do. This was also intended to protect the lifeless form from ruthless robbery and reckless profanation; and it performed this task so well that, for near two thousand years, no human eye beheld the mortal part of Mausolus and no human hand disturbed its rest. At a far earlier time, Abraham, the Father of the Faithful, while he illustrated this tendency to entomb the dead, also offered an influential example to all who would do him reverence, as, in the hour of his great sorrow, he sought the seclusion and the security of Machpelah's cave for the last earthly resting-place of his beloved wife. There he buried Sarah; there he and his son and his son's son and their wives were all laid

"CAMPO SANTO," ANGLE OF CLOISTER.

to rest, and the place of their repose hath not been violated even at this distant day. To this constant tendency constant testimony is borne by the massive and magnificent tombs in which India abounds, the tombs and pyramids that make marvelous the land of the Nile, the tombs that stood thick upon the Appian Way and that rose superb upon the Tiber's shore, the modern use to which the Pantheon is put, the Pantheon at Paris and the Crypt of the Invalides, the Abbey of Westminster matchless in memorials, the sepulchres within the hills that gird Jerusalem, and the sepulchre in which the Nazarene was gently laid when His agony was ended.

It remains to consider whether entombment can be made sanitary; if it can be, the problem is solved, for entombment has ever been the best that the living could do for their dead, and, with the added advantage of promoting, or ceasing to be prejudicial to, the public health, entombment will be the choice of all whom cost or caprice does not deter.

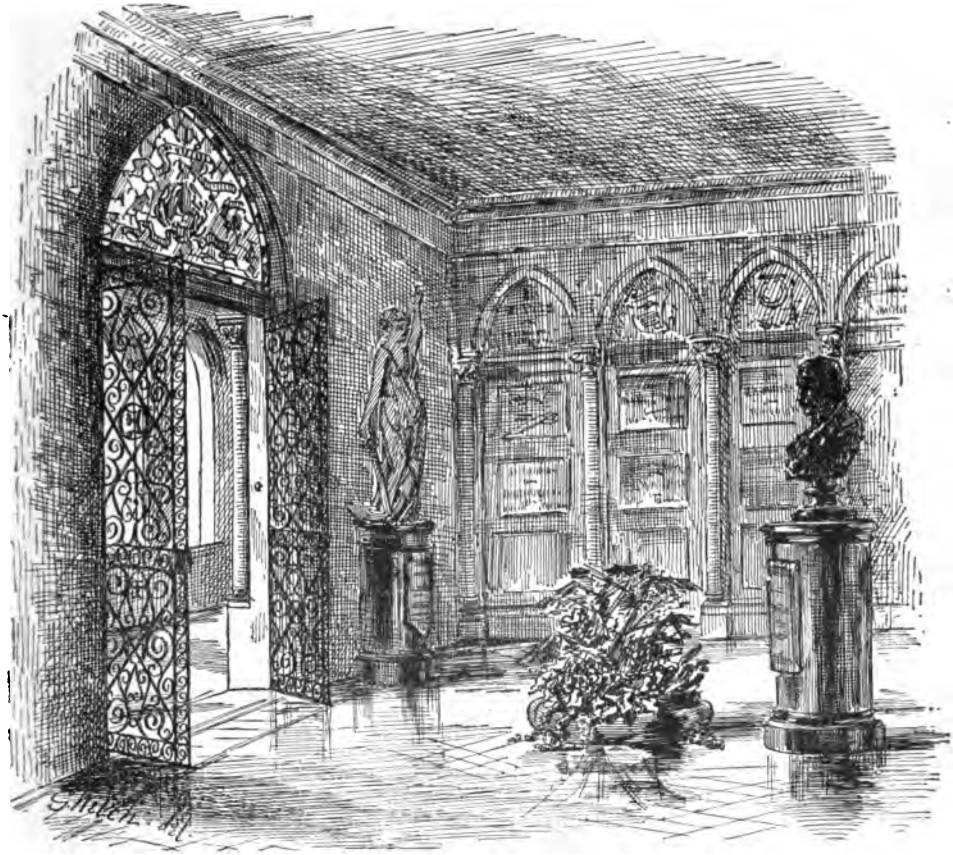
That entombment can be made sanitary is evident from the fact that, in countless instances, in many lands and through long periods of time, it has been made sanitary by the ingenuity of man or by unassisted nature; and it is also evident from the fact that decomposition and disease germs are the dangers to be guarded against, and that against these both ancient and modern science have been able to guard. Not to enumerate all the modes that have been chanced upon or that have been devised by men, there are two that have been notable and are available for modern use—embalming and desiccation.

It is a delusion to imagine that embalming is a lost art; that, like some other marvels of the ancient time, this is a secret process that perished with the people that employed it. Did we desire it, we could embalm our princes and our priests, and retain their shrunken similitudes for distant coming times to gaze and gape upon, as skilfully as they who practiced this art in Egypt's palmiest days. Nay, it is doubtless far within the truth to claim that, better than they did we could do; and we are actually apprised of better methods and results than they employed or could attain, and it is not unlikely that we shall hear of better methods still. But Egypt's method, or its modern counterpart, will hardly now be popular. It involves too much mutilation and too much transformation. When it has done its work little is left but bone and muscular tissue, and these are so transfused with foreign substances, that a form moulded from plastic matter or sculptured from stone could almost as truly be considered that of the lamented dead as this. Moreover, indefinite preservation of the dead is not desirable, and is not desired. The uses to which the Egyptian Pharaohs and their humbler subjects have been put in these days of indelicacy and unscrupulousness in the pursuit of science or sordid gain, are not such as to make many eager to be preserved for a similar disposition, when the present shall have become a similarly distant past.

Desiccation, in striking contrast with embalming, is the process of nature rather than of art; and involves no mutilation and no substitution of foreign substances for human flesh; and does not by unnatural means preserve the semblance of the human form so long that a susceptible sentiment is shocked and a due return of material humanity to the elements that gave it birth prevented. Desiccation is so far a natural process, that it seems not to have been thought of, until nature had done the work and shown the product; and through many centuries, and upon an extensive scale, nature had employed the process before it occurred to man to copy her, and adopt her method for the disposition of the dead.

Wherever the air that enwrapped the lifeless form of man or beast was dry, desiccation anticipated and prevented decomposition. In deserts, upon elevated plains, upon the slopes of lofty mountain ranges, to which the winds that passed their summits bore no moisture, the dead have not decayed, but have dried undecomposed. In the morgue attached to the Hospice of St. Bernard, the dead, lifted too late from their shroud of snow and borne thither to await the recognition of the friends, dry and do not decay. In the "Catacombs" of the monastery of the Capuchins at Palermo, and in the "Bleikeller" at Bremen, the same phenomenon has appeared. Even Egypt is a confirmation of these statements, for it is probable that, had much less care been taken to preserve the dead, they would not there have yielded to decay as in other lands; and that moisture is so far absent from the atmosphere that the dead would have been preserved from decay by desiccation had not embalming been resorted to. Upon the elevated western plains of this continent, the bodies of beasts and men, by thousands have been preserved from decomposition by desiccation. To take one instance out of many that might be cited: A cave was not long ago discovered high up among the Sierra Madre Mountains within which were found, where they had rested undisturbed for many years, the lifeless figures of a little aboriginal household, dried and undecayed. Father, mother, son and daughter, one by one, as death had overtaken them, had been brought thither, bound so as to keep in death the attitude that had marked them when at their rest in life, and there they bore their silent, but impressive witness to the beneficent action of the unmoist air that had stayed decay and kept them innocuous to the living that survived them. In Peru, instances of this simple, wholesome process abound on almost every side; upon the elevated plains and heights, as also beside the sea, the dead of Inca lineage, with the lowest of their subjects, are found in uncounted numbers, testifying that in their death they did not injure the living, because desiccation saved them from decomposition; and a recent traveler has vividly described the scene that a battle-field of the late war presents, and that illustrates the same process, where, though years have passed since the last harsh sound of strife was heard, the fierce and bitter combatants still seem eager to rush to conflict or to sink reluctant into the embrace of death. And all these instances furnish conclusive proof that decomposition can be controlled, and that its loathsome and unwholesome transformations can be prevented, if only the simple conditions are secured that have already so extensively effected this result. That these conditions can be secured no one can doubt; for, every day, in almost every clime, by processes familiar and available to man, the atmosphere has moisture added to it or taken from it; and the extraction of the moisture from a portion of the atmosphere is all that is required to introduce the process of Peruvian desiccation into the sepulchres of Chicago or New York.

It will naturally be further asked, "Is this all that has been done to demonstrate the efficiency and availability of desiccation for the dead?" To this answer would be sufficient that the evidence that has been adduced is ample; and that, at once, in perfect confidence as to the result, mausoleums might be erected, with provision for the withdrawal of the moisture from the atmosphere and for the passage of the desiccated air through the sepulchres in which the dead should rest. So little is involved, and so much has been accomplished without the application of any human skill, that it seems inevitable that, as soon as the resources of modern architecture and sanitary science are drawn upon, the desired result will be at once attained. But, to make assurance doubly sure, several carefully conducted experiments have been made, under the supervision of the directors of the New Mausoleum movement, that prove that the conditions of desiccation can be controlled,



"CAMPO SANTO," FAMILY COMPARTMENT.

and that decomposition can be prevented, that where it has begun it can be stayed, and that prolonged preservation, with a fair approximation to the appearance in life, can be made sure, for the recognition of absent friends, for transportation, or for the furtherance of the ends of justice.

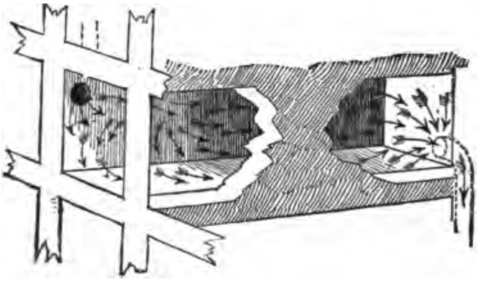
When, now, it is added, that desiccation has been ascertained to be an efficient agent in the destruction of disease germs, as proved by the experiments of Dr. Sternberg, of the Hoagland Laboratory, and by the investigations of other experts, enough seems to have been said to establish the truth of the assertion, that entombment can be made sanitary, and that therefore, entombment offers the satisfactory solution of the problem how to dispose of the dead so as to do no violence to a reverent and tender sentiment, and at the same time not to imperil the public health.

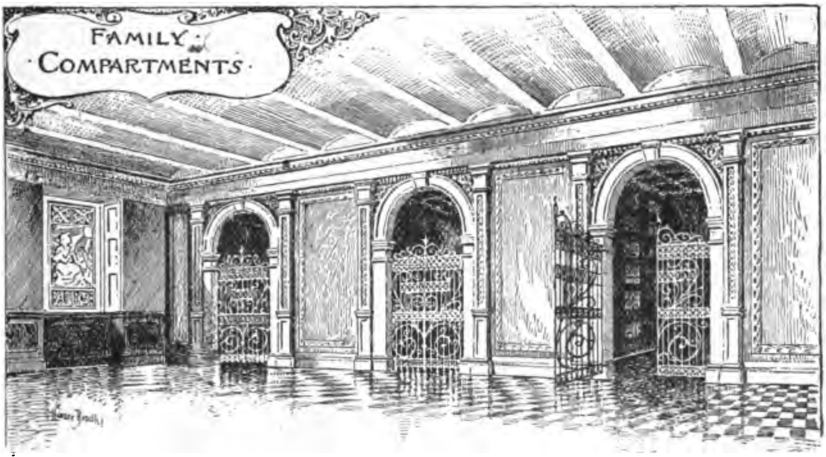
The proposition, then, soon to be submitted for public approval is this: to erect in the suburbs of our large towns and cities, perhaps even in their most thickly-populated parts, extensive and handsome edifices that will provide sanitary sepulchres for the dead. To be comparatively inexpensive, they will have to be comparatively plain; and it seems not too much to hope that our cities will soon adopt this mode of disposing of the dead that depend upon the public care for burial; and that the horrors of a "Potter's Field," of which it can not be divested even in a fair and sea-girt isle, may be forevermore unknown to men.

All these structures, however, will not need to be inexpensive and plain. Many of them, as the rich shall lavish their wealth upon them, will be spacious and splendid, as no tombs of earlier time have ever been. These will naturally differ in design and plan, and while one will incline to one order of architecture another will incline to another; one will incline to the light and graceful style of the Greeks, another to the substantial and enduring Roman type, another to the still more firmly-built and time-defying type of the Egyptians, another to the rich and exquisitively decorative Byzantine style, and another to the Gothic type, with its suggestions of spiritual aspiration and heaven-sent consolation and heaven-born peace. It should certainly be the architect's study to avoid, as either of these styles is adopted, the appearance of edifices with familiar and established secular or sacred uses. These must, if possible, be so designed as to speak of repose and loving care and undying recollection, and should appear to be homes for the dead, and yet temporary habitations in which they only rest until the resurrection.

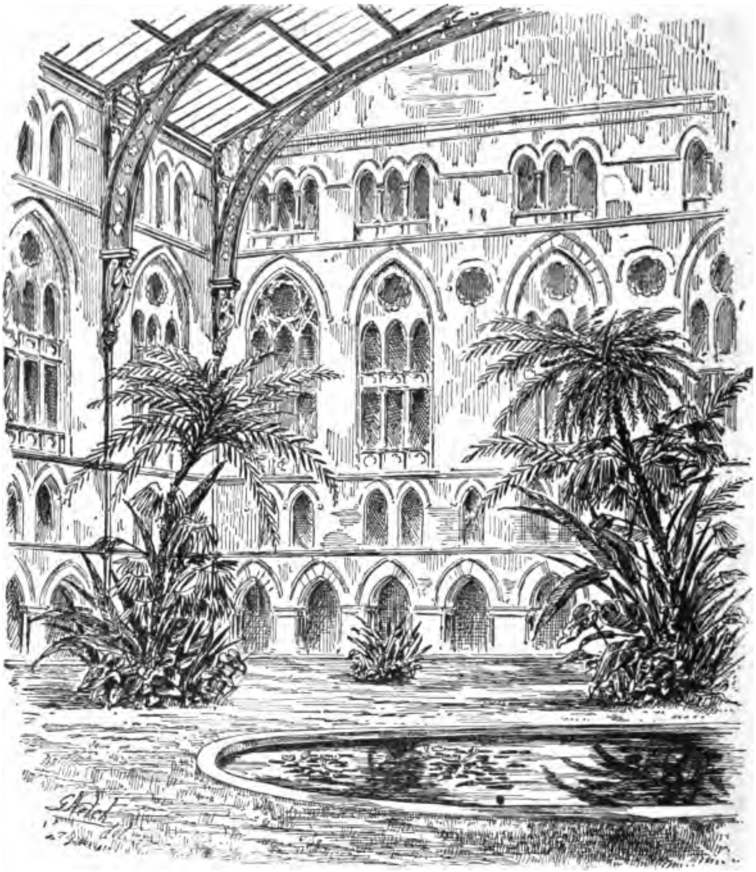
Perhaps the most favored style will be that of the "Campo Santo," like that at Pisa, where the Holy Field lies light upon the dead, and where the softened sunshine and the tempered wind and the hushed notes of happy birds and the sweet seclusion of the spacious and graceful Gothic cloister, with its memorials of many who have been loved and lamented, and its rare pictorial teaching of the life to come, all speak soothingly of hope and peace and comfort. Such a "Campo Santo," modified to meet the demands of modern life and art, might well be one of the crowning monuments even of this wondrously achieving age. To what a grand and noble consummation would it seem to lead the race in their efforts for a fitting disposition of their dead! And what honor would it reflect upon the men who should erect it and place it at the command of their fellows, in due regard for what both health and heart require!

Within, there would be, as the unit of construction, each sepulchre so constructed that anhydrous air could enter, or would be made to enter, and withdraw laden with moisture and morbific matter, which it would convey to a separate structure, where a furnace would complete the sanitary work that the anhydrous air had begun, and return to the external atmosphere nothing that would be noxious. Each sepulchre, in itself and its surroundings, would appear to provide a place of repose, and would have electrical appliances attached to it for the instant indication of the return of consciousness to any who had been prematurely entombed; and would promise and provide the most perfect and permanent protection against intrusion or theft that can be found on earth. In arrangement these sepulchres would have to conform to the price paid and the taste of the purchaser. Many would be like the single graves that thickly ridge portions of our cemeteries, many more would be grouped together after the semblance of a family tomb (as in the illustration), but in the general impression, in the surroundings and sugges-





tions, the resemblance to the provisions of a cemetery would go no farther. For, here there could be no burning sun, no chilling cold, no inclement storm; for the living, as they should pay the last sad honor to the dead, or in any subsequent tribute of affection, there could be no exposure, and for the dead there would be only the constant semblance of the comfort and quiet of the best ordered and most tranquil home. Thus, in providing the utmost that exacting affection and sanitary science can require, and in taxing to the utmost the resources of art, in architecture, in sculpture, and in the use of subdued and according hues and forms for appropriate decoration, these "Campo Santos," or "Mausoleums," or "Mansions of the Dead," will seem to have realized the ideal disposition of the mortal remains of those who depart this life.



"CAMPO SANTO"—INNER COURT.

In conclusion, it is evident that the present modes of disposing of the dead are unscientific, unwholesome, repulsive, and, in a word, unworthy of this enlightened age.

On the other hand, it is apparent that the New Mausoleum method of disposing of the dead affords relief from all these obnoxious features, inasmuch as it provides for the perpetual care of the dead; protects from premature interment; protects the dead from theft; protects the living from exposure, while paying the last duty to the dead; meets the demand of the most reverent and tender sentiment; meets the urgent sanitary demand that the dead shall not endanger the living; meets the medico-legal demand that the evidence of crime shall not be destroyed; and costs less, in view of its manifold advantages.

PECULIARITIES OF MODERN TYPHOID FEVER.

BY E. S. ELDER, M. D.

From the earliest medical antiquity to the days of Cullen, one hundred and fifty years ago, the term fever was a generic one, and alike applied to all morbid maladies, involving febrile action. With that intelligent energy which characterized Cullen, he began the investigation of this protean malady with a view to more clearly define and present its characteristic features. Very soon he discovered and demonstrated the necessity for isolating certain trains of symptoms, and arranging and classifying them in accordance with their peculiar pathogenic manifestations, the result was that two great classes of fevers were formed, out of which embraced originally the one. These two classes, viz: the idiopathic or essential, and the symptomatic or non-essential; or more concisely, the enecia or continued fever, and epenetus or remittent fever.

Cullen describes enecia or continued fever as "fevers without intermission and without being produced by marsh miasmata, but with remissions and exacerbations, though not always continuing; two paroxysms each day?" Continued fevers were by this observer divided into three forms, viz: synocha or inflammatory fever, typhus or the fever of prostration, and synochus, which held an intermediate position between synocha and typhus. This classification did not meet with general approval among that class of conservatives, which has always been found in the medical profession, and who have so steadily, persistently and uniformly opposed the introduction of new doctrines and new practices in medicine.

One of the most distinguished of American physicians, Benj. Rush, of Philadelphia, said in 1780: "That it is not more improper to say that men are of different species because some are tall and others short, or because some are long and others short-lived, than to say that fevers are of different species because they vary in their symptoms and duration." Although violently opposed by many, the doctrines and classifications of Cullen were generally accepted, but, there were recognized peculiarities and features in this second class of maladies, which precluded the idea that all general fevers should be denominated typhus or the fever of prostration. I believe it was Louis, of France, who first assumed that there were essential differences between at least two forms of typhus, and in 1836 he issued his work which boldly announced his belief that there was a peculiar essential fever, which he denominated typhoid or typhus like. His work justly became a standard in Continental Europe, and its advent is to-day recognized as a great epoch in medical history. Almost simultaneous with the publication of Louis' great work, Edward Jenner, of England, announced his belief in the existence of another specific form of fever differing materially from, but usually denominated typhus.

Cullen's typhus to this time embraced that which Jenner now denominated, and we still recognize as five distinct varieties of fever, viz: plague, typhus typhoid, relapsing and simple continued fever. In 1838 Jenner, with great skill, patience and sagacity, traced out plain lines of division between these different forms of disease, especially between the typhus and typhoid which, until Louis' work, had always been confounded together. Other observers were at work, Stewart in 1840 read a paper before the Parisian Medical Society strongly endorsing Louis' teachings and more clearly defining the diagnostic features of typhus and typhoid fevers. Bartlett in 1841 and '42 published a work on fevers in which the views and teachings of the European observers were strongly supported, and supplemented by the author's observations in the United States.

A fierce professional controversy arose over these teachings. Watson, Budd, Grisolle, Bennett and others in Europe arrayed themselves in opposition to the new classification, while Dunglison, Eberly, Dewees and other American physicians were able allies on this side of the water. But truth in this case, as it will in all others, ultimately prevailed. Watson and his conferrees in England gracefully acknowledged Jenner's teachings; Dunglison, Dewees and others in America acknowledged their error, while in France the teachings of Louis were universally received. In Scotland Bennett and his associates acknowledged that the teachings of Jenner and Louis might be correct as to England and France, yet in Edinburgh there was no difference between typhus and typhoid.

The finishing stroke against the theory of the identity of typhoid and typhus fever in America was given in 1846 by Dr. George B. Wood, who, with the hand of a master, grouped and placed under the head of "Enteric Fever" the diseases previously known under the various synonyms of continued fever, typhus mitior, nervous fever, abdominal typhus, ulcerated intestinal fever, intestinal exanthematous fever, sporadic typhus, entero-mesenteric fever, dothin-enteritis, follicular enteritis, etc. From the time of the appearance of Wood's work on "Practice," American physicians very generally dropped the various synonyms, excepting that of typhoid fever, and until the present the terms enteric and typhoid fever have been used to designate the malady in question.

Dr. Wood's description of this disease is perhaps the most graphic and lucid article in American medical literature, and for forty years has been regarded as classic. You are doubtless all familiar with the symptoms of the malady as given by Wood and Jenner. Wood says: "The most characteristic symptoms of this disease are frequently slow and insidious in the mode of attack; the diarrhea at the beginning or very soon afterwards (according to Louis, an almost uniform symptom); a dull or heavy expression of countenance; the dusky hue of the face; the tendency to epistaxis; the cough and bronchial rales; and, after the seventh day, the dryness of the mouth, the heavily-coated, dry, firm and swollen tongue, and general diminution of secretions, the rose-colored eruptions (one of the most characteristic phenomena), the sudamina and the tympanitic abdomen. I have never witnessed a case without the deafness, the stupor or delirium, and the various signs indicative of the typhoid state, the fever increasing gradually for several days at least before reaching its apex, and then continuing with but little variation for a number of days, the patient's condition gradually deepening."

Equally explicit is Jenner's description of symptoms of typhoid fever, written in 1849, which is as follows, viz:

"A disease arising from a specific cause, attended by rigors, chilliness, headache, high fever, successive crops of rose-colored spots, frequent pulse, sonorous rale, diarrhœa, fullness, resonance and tenderness of the abdomen, gurgling in the right illiac fossa, increased splenic dullness, delirium, dry and brown tongue, and terminating by the thirtieth day. After death, enlargement of the mesenteric glands, disease of Peyer's patches, enlargement of the spleen and disseminated ulceration."

These descriptions remain in our text-books almost unaltered, yet I am convinced that the descriptions are at present only exceptional and ideal ones, and that the ordinary typhoid fever of to-day is a material modification of that of Louis, Wood and Jenner. In order to determine the truth of this proposition, let us examine the matter a little by reviewing and contrasting the symptoms as given by them, and those presented by the disease in practice. I shall not present you statistics, but will appeal to your own observation and experience. Wood's first diagnostic symptoms is the slow and insidious mode of attack. This is characteristic of only a portion of the cases as we now meet them.

Frequently we meet with cases of this disease where the attack has been sharp from the outset. A chill followed by fever at once is not an unusual mode of attack. At other times our patients are sick from the inception of the disease, and the malady is apparent from the outset. A gradual increase of the fever for a considerable length of time—fourteen to twenty-one days—before it reached its acme, was a characteristic feature of Wood's description.

I think that all will now readily concede the fact that in many cases of typhoid the temperature reaches its maximum very much earlier than these periods. Frequently we find a temperature of 103° to 104° F. on the second or third day, and in some cases a temperature of maximum height at the inception of the malady.

Dr. Walder describes an epidemic in Switzerland during which in many of the cases the temperature was the highest on the second day. Dr. Johnson writes of a recent severe epidemic in Michigan where, within twenty-four hours, the temperature ran up to 104° F. or 105° F. Many other observers corroborate this fact. Another peculiarity of the temperature as recorded by Wood, viz.: That it ran regularly in an ascending scale until the maximum was reached from the fourteenth to the twenty-first day, then a gradual decrease to normal, with a daily variation to two degrees. In addition to the early maximum temperature, we often notice a daily fluctuation of four to five degrees, falling to normal and then running up to 104° F. and 105° F. again. Some of our patients present a high temperature, not only early, but very late in the disease. I have had patients with a temperature of 104° F. as late as the thirtieth day, when the patient was far on the convalescent road, and still the progress of recovery was not retarded or interrupted. Another peculiarity of the course of the malady in our modern typhoid is, that in many cases a slight febrile action has attended the malady from the outset, and although the cases were unusually severe and fatal, and a heavy mortality characterized them, repeated and careful thermometric observations demonstrated that the temperature never rose above 102° Fah. In the epidemic of the disease at Pittsburgh several years ago, and at Cincinnati one year since, also in the epidemic at Iron Mountain, Mich., in 1887, where there were 350 cases and 35 deaths from this disease, many cases were encountered where this low range of fever was observed, and where death ensued numerous post mortem examinations evinced the correctness of the diagnosis. Friedlander, Zeimison, Fengel and others report similar cases.

These anamolies of hyper-pyrexia are not the only thermic characteristics which distinguish modern typhoid fever from that of Louis, Jenner and Wood. An anti-febrile condition now marks the course of many cases of the disease. Numerous cases have been reported by Liebermeister, Zeimison, Straube, Frenzel, Friedlander and others. Where the temperature was subnormal Friedlander reports 100 cases in which the post mortem examination conclusively demonstrated the fact that the patients died from typhoid lesions in 41 of these cases, yet the temperature was continued below normal. Dr. Crowell, in his report of the recent epidemic at Iron Mountain, Mich., says:

"A subnormal temperature was very frequently observed, not only in the start but throughout the disease." We might multiply these reports but we forbear. We can positively assert that the former teachings that fever always attended cases of typhoid has been demonstrated to be not true in modern cases. The great diagnostic sign of the typhoid fever of Wood's description—evinced by the name given it by him—was the intestinal complications, the diarrhœa, tympanites, gurgling and hemorrhage. The contrasts to these in our modern typhoid fever, are perhaps the greatest distinctive differential points. Wood says that "Diarrhœa, according to Louis, is an almost uniform symptom, the stools may be one or two daily, or more frequent, up to ten or twelve or more daily." There is unusual susceptibility to the action of purgative medicine. I can not say that this has held to be the case in my own experience. Many of our cases now exhibit no diarrhœal symptoms; in fact constipation of the bowels is one of the common and troublesome complications. I am safe in saying that in a majority of the typhoid cases I have observed in the last few years constipation prevailed, and in conversing with physicians throughout the State I have found that their experience corroborates my own.

Crowell says of the recent epidemic of Iron Mountain, "that constipation for the first ten days and frequently throughout the whole course of the disease existed in one-half of the cases."

In the Pittsburg and Cincinnati epidemics constipation was very frequently present. Strumpell, in his new work says, that "In the beginning of typhoid fever there is usually constipation, and this may last throughout the illness, so that all patients have but one dejection in every two or three days, or often none at all, unless an enema is given, and laxative and even mild cathartics act not excessively."

So we can affirm that constipation and not diarrhœa is not uncommonly a characteristie attendant of modern typhoid fever, and this, notwithstanding the fact that fewer opiates or other narcotics or astringents are now used in the treatment of this disorder than formerly.

Dr. Wood states that tympanites is almost a constant attendant upon the disease. We concede the fact that tympanites is more frequently present than diarrhœa, but instead of being almost a constant attendant it is not infrequetly wanting. Strumpell says, "Indeed severe cases of typhoid were observed in which the abdomen remained concave." Crowell also referring to prevailing symptoms says, "the abdominal pains, tympanites, gurgling in right illiac fossa, although certainly present in many cases, were conspicuously absent in a very large number of them." Our own observations certainly demonstrate the fact that many cases of undoubted typhoid present no tympanitic manifestations, and the necessity for the turpentine stupes and other remedies to relieve tympanites is only exceptional.

Gurgling and tenderness in the illio-cecal region are often present but as often absent, and while their presence is regarded of diagnostic value, their absence does not weigh against the probability of the disease being typhoid and intestinal. Hemorrhage is of rare occurrence, and the proportion of cases in which it is present is certainly growing smaller than a few years ago.

The dull, heavy expression of countenance and dusky hue of the face, which Wood gave as diagnostic signs, are now present in only a minority of cases, and not considered diagnostic. Epistaxis is still considered symtomatic, and generally encountered. The dryness of the mouth is yet a symptom of value, but not so universally as it formerly was. The irritation of the stomach referred to in the early descriptions is now wanting in many cases. Our typhoid patients take large quantities of liquid or semi-liquid nourishment and no nausea follows. There is usually anorexia, but not a special distaste for food.

Jenner says of the tongue in typhoid fever that "the dry tongue with red tips and edged, smooth, furred, of a pale brownish-yellow color and fissured, the surface between the fissures being of a deep red, may be considered a diagnostic sign of typhoid fever." Wood lays great stress upon this condition of the tongue as the one belonging to typhoid fever. We are sure that the dry, cracked, dark coated, glazed tongue now forms an exception to that usually presented. Frequently our patients pass through a course of the disease and the tongue presents none of the former phenomena. The sordes on the teeth is not of frequent occurrence, formerly it was always expected. The rose-colored eruption is now the exception, while sudamina and petechia are rarely encountered. The stupor, delirium, subsultus tendinum and other indications of nervous derangements and exhaustion are yet frequently present. But it is not unusual to see a patient pass through the course of the disease without them, and occasionally a patient will be bright and cheerful all through. Another peculiarity of modern typhoid fever is that the secretions are frequently kept at normal, the kidneys acting freely; and the perspiration is frequently excessive and associated with a high temperature. We often find a profuse perspiration and a temperature of 103 to 104, and this sweating attends some cases at the outset, and seems not to cut any figure in the course of the malady. I might point out more variations from the typical cases of typhoid fever as pictured by Wood and other early observers, but deem it unnecessary. The discrepancies mentioned will be sufficient to induce you to consider the matter carefully, if you are not already satisfied that his description is not so true for the cases now observed as it formerly was.

I feel certain that for several years past my cases of typhoid fever have not possessed the alarming features which formerly belonged to this disease. The deaths from this malady among the patients of the more intelligent physicians are now rare. My observation is, that we meet with more mild cases now than formerly. Walking cases are not at all uncommon. In my opinion very many cases of mild typhoid fever pass without being denominated that disease. I have no excuse or sympathy with physicians who denominate all cases of fever as typhoid, and who cure them in a few days, but I have no doubt but that a fear of being criticised by the profession has prevented regular physicians from doing themselves justice and credit by properly calling all cases typhoid fever which deserved that title. Numerous cases are reported where a post-mortem examination astonished the attendant by presenting well-known lesions of typhoid. From the foregoing considerations and after careful observation and close study for twenty-two years, it appears that there is a change of the type of typhoid fever from that of 1836, and this seems to me incontrovertible. This change of type has taken place gradually, and has been most marked in regions which were formerly the seat of malarial diseases, where the forests have since been cleared out, the swamps drained, and the country relieved from malarial fevers. The typhoid manifestations ensued, and instead of the former intermittent fever (ague), remittent and bilious fevers of the past decades, we now have typhoid, not the severe form of fever described by Wood and Jenner, but that fever modified. I know that many cases of typical forms of the typhoid fever described by Jenner and Wood are met with, cases which present the symptoms so graphically described by those authors, but these cases are the exception to the rule—most frequently the modified form is encountered. I use the term *modified form* advisedly. You are all aware of the fact that during the War of the Rebellion so many cases were met with, which presented a combination of the symptoms of typhoid and malarial fevers, that army medical officers were embarrassed in classifying them, and in some cases designated them according to the locality where they encountered them, thus Potomac fever, Chickahomony fever, Vicksburg fever, etc. In 1863 Surgeon J. W. Woodward introduced as a name for all these various forms of fever, the term typho-malarial fever, accompanying this by a monograph, illustrating and describing the pathological lesions and delineating a class of symptoms which he considered diagnostic of the malady, which he claimed was essentially a different disease from typhoid fever. Dr. Woodward so graphically and forcibly represented the observations and experience of the medical profession throughout America that his views were at once accepted, and typho-malarial fever was assigned a place in our nosology and became a familiar medical word, expressing at once the conception of the pathognomy and its identity. So wide was the variations of the symptoms of these fevers from those described in the text-books that the term typho-malarial fever at once found favor with the profession and was almost universally adopted by American physicians. Subsequent observations and study convinced Dr. Woodward that his views were erroneous, and that the term typho-malarial fever was a misnomer, and at the meeting of the International Congress in 1876, he publicly acknowledged his error, and asked that its name be stricken from the nosology and that all these cases be called typhoid. This was done by a unanimous vote, but still many physicians adhere to its use, and our journals and health reports are full of cases of enteric fever reported as typho-malarial. This is wrong and in violation of scientific teachings. The universal belief of the profession is that typhoid fever is a specific disease. If this is true we can not make it a mongrel; it is either typhoid fever or it is not. So with malarial fever; it is a specific malady arising from a specific cause, and since like produces like, we can have no other specific malady resulting from either typhoid or malarial poisoning. As well talk of sowing wheat and raising oats or flax. We appreciate the fact that these two diseases can be modified by extraneous surroundings and circumstances, but the original poison is only changed and weakened or intensified in accordance with the influence under which it exists. It is still as much typhoid and malarial fever, as varioloid is variola, or scarlatina simplex, scarlatina, or a diphtheroid case, diphtheria. To acknowledge anything else would be to deny the individuality of the zymotic diseases. The very fact that so many were willing to accept the term typho-malarial is indisputable evidence that the old description of typhoid fever did not satisfactorily identify the disease as met with in practice. By experience having thus been obliged to recognize this fact and being precluded from accepting the term typho-malarial fever, we are necessarily compelled to admit that the typhoid fever of to-day is a modification of that described by Louis, Jenner, Wood and others, fifty years ago.

That their descriptions of the diseases were correct, we can not for a moment doubt. Deprived as they were of many of the recent aids in the examination and investigation of diseases, they were necessarily compelled to carefully utilize the means they possessed and to cultivate their senses to the utmost degree of acuteness. So that we can rest assured that the descriptions given by them were intelligent, correct and honest ones. That being the case we are driven to the conclusion that there has either been a change in the type of the disease itself, or a change in the human organism such as to modify the effect of the toxic agent producing the disease sufficient to mask the symptoms of the same characteristic malady of 1836 to 1840. Which of these is the correct solution? What caused the change? How was it wrought? Has the poison of the malady been modified or intensified? Or has the physical organism of man been changed, constituting him a different subject than formerly, and thus rendering disease more or less authentic than it formerly was, as taught and believed by many physicians? These are very interesting problems—we have not time to study them, but let us glance at them.

I can not think that the physical organism of man has undergone any deterioration in the last fifty years. Physiologists tell us that the vital forces are as active now as then. Anthropologists assure us that the human frame was never better developed than now. Physical exercise exhibits feats of strength and endurance equal to if not greater than ever before witnessed. Running, jumping, swimming, rowing, pitching, wrestling, boxing and other athletic and calisthenic exercises never before presented greater achievements. Travelers, explorers, soldiers and sailors undergo the fatigue and privations of campaigns, explorations, expeditions and all other excessive demands for physical endurance better than ever before. Regions formerly considered uninhabitable on account of disease are now becoming populated. Sanitation has been raised to a science. Boards of health and health officers now constitute important members of the body politic, and laws protecting the public health are on our statute books and their enforcement demanded by the people. Public sentiment is now educated to a point that makes a nuisance against the public health intolerable and odious, and the strong arm of the law is now freely invoked in defense of the health of the people. The mass of mankind live more comfortably, have better food, pleasanter homes, with truer hygenic surroundings than in the past. Our towns and cities, owing to the vigilance of health officers, are kept in a sanitary condition. In the country throughout, swamps and lowlands have been drained, forests have been cleared. There are more schools, churches, asylums, dispensaries, foundling institutions, associations, lodges and societies and other institutions to relieve human suffering and wretchedness than ever before in the world's history. We have more scholarly physicians, better medical appliances and medicines, more capable nurses trained and under training than our ancestors had. The fatality from nearly every disease has been reduced. The plague of small-pox, cholera, yellow fever and other awful scourges has been largely robbed of its terrors. Vital statistics show us that the average duration of human life is now greater than at any time since the flood, and is constantly lengthening. In view of all this, I am unable to comprehend why the human organism should have deteriorated, or is not as well fitted to-day to withstand sickness as ever in its history. Nay, I believe the contrary is true, and that the *vis vita* in man is now stronger than in all the past ages. If this be true, we must acknowledge that the disease *per se*, is different from that of fifty years ago. As to what has caused the change, we can answer there are several contributing causes. It is now universally admitted that typhoid fever is a specific malady, and is the result of systematic poisoning by something that produces the disease and no other; something that is foreign to the human body and which has been introduced as a toxic agent from without. The poison must be an entity, something material, tangible and capable of reproduction and reduplication; something transmissible and transferable from one body to another.

All these requirements are met with only in one class, viz: the "living class.' It matters not whether it is in the form of a germ, cell, bacillus micrococcus, spirillum, streptococcus, diplococcus, or any other shape assumed by bioplastic matter, or, if we admit that the ptomaine typhotoxicon is the real toxic agent, there must have existed the bacillus typhosus to produce the ptomaines. It is an undeniable fact that, as before stated, the cause must be a living one, possessing, among other attributes of living matter, the power of reproduction. It seems to me that we must admit as more than probable that the special cause of typhoid fever is the bacterium bacillus typhosus, an oval bacillus discovered and described by Eberth, in 1880, and since cultivated and studied by Koch, Brieger, Vaughn, Sternberg, Sokoff, Fischel, Buchner, Michael, Vidal, and many others, and its presence in the lesions of typhoid cases, and its constant association with the malady, its artificial cultivation producing the same bacillus, and, when introduced into the animal economy producing the well-marked clinical and anatomical characteristics which are the pathognomonic features of the disease, leave us little room to doubt that this germ is the true typhoid virus. Now, if this is true, we know that the poison belongs to the department of living vegetable matter, and that it must be governed by the great, immutable laws which control living matter. You know that the first one of those laws is, "That all organic forms of animal and vegetable life successively progress toward perfection in development, or to obliteration and extinction." On the face of all nature change is indellibly stamped; from man and mate came all kinds and races of man. From one representative pair of every species of mammal came the innumerable variety found in the mammalian family. So with birds, fishes, and everything that belongs to the animal kingdom. The same applies to the vegetable kingdom—this immutable law of change, development, perfection and extermination is absolute over all living matter. The second great law controlling living matter, and its change in development or deterioration, is, "That in all living matter this change is proportionate to, and in accordance with, environment."

Thus we find in the extreme North a stunted, enfeebled vegetable kingdom represented by lichens, mosses and an imperfect growth of the most hardy shrubs. Animal life is only represented by a few species of the fur-bearing family and feathered migratory aquatics. Passing southward, as the climate is milder, the flora and fauna become correspondingly richer, until the perfection of modern life in both the vegetable and animal kingdoms is attained in the tropics.

Plants, grains and fruits which are indigenous and perfect in warmer regions are exotics in Northern climates, and removed from warmer climates gradually lose their vitality and power of reproduction, the species becoming weaker and weaker each successive generation, until finally all reproductive power is lost. Our Indiana corn in Northern Dakota and Montana has a miserable struggle for existence, and produces an imperfect yield, which soon degenerates into eight-rowed ears, and finally fails to fructify at all. So with other vegetables and cereals. The cactasea family on the plains of British America is represented by one cactus. a miserable, undeveloped, creeping plant, which, as we pass southward, gradually increases in development until in Mexico, Arizona and Southern California it becomes the "cereus giganteus," sixty to forty feet high and as large as a hogshead. The rich and enormously developed flora and fauna of the carboniferous period represented by the "calamities, lepidodendrons, sigillaries and other forms of gigantic vegetation which form the material for our beds of coal, the monster labyrynthodonts, cosanus, and other amphibians of that age, attest only the degree of perfection attained under the most favorable surroundings. Likewise the remains of the immense dyhrosaurus, mesosaurus and other saurian monsters of the cretaceous seas, and those of the dinoceras, tinoceras, coryphoden and associates of the tertiary period," and the (to us common) remains of the elephas primevas and mastodon giganteus of the recent quarternary period, indicate only the congenial perfection of their environments and corresponding developments. This same infallible law must apply to those lower forms of vegetable life, as represented by the great class of schizomycetes to which the bacterium family belongs, the individual members of which are now so clearly demonstrated to be responsible for the infectious and contagious forms of disease.

All search and experimentation conclusively demonstrate that the changes occur in these forms, as indicated. This attenuation of the virus of infectious maladies has been so systematized by Duclax, Chauveau, Bert, Chamberland, Pasteur and others that they are able to graduate the inoculative effects of anthrax, fowl-plague, pleuro-pneumonia and other diseases to any degree between the line of physiological and toxic limits; this space they denominate the "zone of attenuation." This attenuation is attained by subjecting the specific bacterium of each malady and certain environment, viz.: Age of culture, heat, oxygenation, antisepsis, physiological immunity, sunshine, etc. By these means the microbes are shorn of their virulence in proportion to their unfavorable manipulation, and produce all grades of the special disease.

Again, by reversing the process, this attenuation is overcome by favorable manipulations, the weakened virus is restored to its former deadly toxic power. These experiments and researches have been of great value to the pathologist and physician, and prove the correctness of the views of the paper. Now, if the specific cause of typhoid fever is subjected to different environments from that which originally surrounded it, the poison must be modified and its phenomena altered. I think that we here find the solution to the problem. Man's physical organism and surroundings are different, and when subject to disease that disease will be influenced accordingly; for instance, simple malarial fever in the temperate zone becomes hemorrhagic and pernicious in the tropics. The specific germ of yellow fever finds the most congenial surroundings and perfectly favorable environments in tropical regions of the Western Hemisphere. In South America and upon Cuba, the queen of the Antilles, this special germ establishes its perpetual home, and is yearly carried to other points in the world, where favorable surroundings enable it to functionate, develop and begin its northern march of death; but on our shores it is an exotic, and in its struggle for life only reaches, under the most favorable circumstances, a point where the mean thermometrical range is above 65 Fah. North of that isothermal line the virus never reproduces itself, the imported cases are mild, and the poison loses its pathogenetic power. The germ of cholera finds its choicest pabulum amid the filth, squalor and unhygienic surroundings of India, and makes its permanent habitat on the delta of the Ganges. From thence it follows the wake of the trains of the fanatical, filthy Mohammedan pilgrims, and in the unhygienic surroundings of oriental cities is re-propagated, to be carried along the great commercial highways of earth, and wherever favorable soil is found it settles, to be reproduced again and distributed, in every instance becoming shorn of its strength until finally it is destroyed by intelligent sanitary supervision. Diphtheria germs thrive and multiply in Russia, and are carried to higher civilized countries, where, by sanitation, the germ is emasculated and it dies out.

The bacteria of scarlatina, rubeola, variola, erysipelas and other infectious maladies are all virulent and destructive in proportion to their environment.

Science and experience enable the sanitarian to weaken and mitigate their noxious effects, if not to ward off entirely the attack, to rob them largely of not only their terrors, but their reproductive powers; for the poison generated in a light attack of disease must necessarily be less virulent than that from a severe form, just as vegetables, cereals and animals are more perfect and well developed when placed under the most favorable auspices.

Pasteur, by passing the germs of hydrophobia and anthrax through successive inoculations, in subjects and under surroundings not congenial to their perfect development, so attenuates the toxic power of the virus that the first becomes one of the greatest remedial and protective agents of modern times, and the other the means, annually, of saving millions of dollars worth of the domestic animals of Europe. The poison of variola, by passing through a less favorable medium than the human body, becomes so shorn of its malignancy that it becomes a protective boon of inestimable value to the human race. The germ of typhoid fever has now to contend for its life against the intelligent sanitary science of our Christian civilization, our hygienic surroundings and modern therapeutics. When we meet with the typhoid fever of to-day we encounter it upon different terms from those which our fathers in medicine were compelled to accept, and we meet it under more favorable auspices and with its environment tending to weaken the force of its attack and to modify its toxic effects.

Place typhoid fever poison under the same surroundings and unhygienic conditions that attended it fifty years ago, and you will reproduce the disease with all its former malignancy. This is proven by the type of the disease as witnessed now in the prisons of the exiles of Russia and Siberia, as observed by Kennan; or in the late Turko-Russian war. Typhoid fever is, in my opinion, a modification of typhus fever. It has only supplanted typhus because the environment favorable to typhus poison has been removed and the malady is losing its power and malignancy. Its presence is a reproach upon hygiene and sanitation, and these sciences being developed and cultivated, typhoid fever will be subdued, to be supplanted by some other malady, which will find proper pabulum and support from the improved sanitary surroundings.

On the contrary, if civilization retrogrades and hygienic requirements are ignored, typhoid fever will assume its former severity, and, should those conditions deepen, typhus, the plague, the horror of the darkness of the Middle Ages, will again devastate the earth and carry millions to the grave.

For, as the Peri heard at Heaven's gate—

"'Poor race of men,' said the pitying spirit,
'Dearly ye pay for your primal fall;
Some flow'rets of Eden ye still inherit,
But the trail of the serpent is over them all!'"

CAN THE AVERAGE DURATION OF LIFE BE LENGTHENED BY PROPER SANITARY REGULATIONS?

BY W. DANIEL, CORYDON, IND.

The average duration of human life is a subject that has been closely considered from the earliest period of human existence.

From the time when the edict first went forth to the human family that all should die, the length of time a man might reasonably consider his own has been of interest to every one.

The book says: "The life of man shall be three score years and ten," but we find, from strict attention to statistical research, that the average duration of human life is about 33 years; being somewhat less than one-half what the best authority informs us it should be. Time was when this statement was undoubtedly true, but as men passed into darkness and ignorance, and neglected the natural laws of health, the average length of life became shorter and shorter, until in and during the dark ages the average duration decreased to from 26 to 30 years. But as the world emerged from this state of darkness and ignorance, we learn that the average duration of life became lengthened. Until the present century of enlightenment and scientific knowledge the gain in this direction was quite slow, but during this century we have been blessed far beyond our kindred of the past. These facts teach us that man himself, and him alone, is responsible, and can, as a whole, lengthen or shorten human life at will.

The more enlightened and intellectual a nation, and the better care she takes of her people at large, the longer will be the average duration of life of her citizens. Now if we accept this statement as correct (and we believe there are none who will gainsay it), it is of direct practical importance to ascertain and put into practice the best known methods of protection of public health and enlightenment of the masses, that health may be preserved and life prolonged.

There are many and various sources of danger to human life, and many agencies are brought to bear upon man having a destructive tendency, but as physicians we regard but one, namely, that of disease.

From the days of Hypocrates, physicians have been combating diseases at the bedside; they have brought to bear upon each disease, or rather the patient, every green herb known to man; they have used them as decoctions, tinctures, extracts, poultices, etc.; they have gone into the bowels of the earth and rudely wrested her sealed secrets from her; they have exhausted her mines, and have compounded and re-compounded her elements, and applied them in every manner and way conceivable under the sun. They have exhausted the animal kingdom, from the Spanish fly to the pig's stomach, and yet in the preservation of life, but little has been accomplished. They have brought medicine up to that degree of excellence, that it is denominated a science. They have classified diseases, and have so clearly and perfectly exemplified their different characteristics that a fool may not fail to distinguish between them. They have arrived at a definite knowledge of, and have learned the nature and habits of most all the active agents by and through which diseases are produced in the human body, and yet, in medicine, by the use of drugs on the animal economy, they have failed and still continue to fail to cure diseases.

We do not wish to infer that drugs are a failure, and of no benefit to man, for they may and do modify and abate the influence of disease, and to some extent protect our patients against their ravages, and thereby increase to some degree the chances of recovery; but there is now no question but what drugs have proven a failure in the cure of diseases, yet they may and do assist in restoration to health many who have been injured and broken down by diseases. They are worse than useless in the prevention of diseases, as applied in any manner to the individual.

Men of learning and ability in the medical profession long since discovered the failure of drugs to protect life against the inroads of disease, and having the welfare of their fellowmen at heart, cast about them to ascertain if some other more efficient means might be attained and put in practice for the protection of human life.

As a result of their study and inquiry, we have the present organizations of public health boards of our State and counties. These sanitary organizations, after having met with much opposition in the profession and out of it, have finally become fixed upon a somewhat solid basis.

From the day when the immortal Jenner, in the privacy of his retirement and seclusion, discovered and gave vaccination to the world, preventive medicine has been surely and steadily gaining ground, until to-day, the most important and practical question that can be asked concerning any disease is, how can we best prevent it?

To prevent diseases will be in the coming years the great work of the medical profession.

It is the *humane* work of the profession, and the only source through which we may expect to protect and lengthen life.

The medical and statistical history of the past in this and other countries teach us that the only sure and rational means by which the average duration of human life can be lengthened is in the protection of public health. In other words, the protection of the masses from any and all diseases which may threaten them. In fact, the two are so inseparably connected that the former is wholly dependent upon the latter.

The question of public health is double in its bearings. It is one which affects us individually and collectively.

It is one which comes to our homes, and casts a feeling of safety and security around our firesides. It comes to every heart as a harbinger of joy, a messenger of happiness.

Who can estimate the number of homes that have been protected by vaccination? The number of lives preserved to the State, home and fireside? The amount of suffering and misery averted, and the number of days and hours of joy and happiness secured?

The number of lives extended and sorrow and misery averted by it alone more than overbalances all the money, all the time and all the labor expended by all the boards of health throughout our broad land.

It is the cherished desire of every one of sane mind to live as long as is consistent with the laws of nature, and who will not under all circumstances put forth a laudable and earnest effort in the protection of his life when threatened with danger? So we as a nation and a people, should have every protection possible under present knowledge. In fact it has always been held that the duty of a State or Nation to its citizens has been to protect their lives and property; and no State is doing its duty to its citizens that does not give to them as full and perfect protection to life and property and civil liberty as can be attained by stringent statute laws, police forces, etc. Yet while this is true, and is, we believe, efficiently done in our State, the protection of our people against diseases dangerous to public health, is of equal importance. This to a great extent is now being done by our State Board, but not so thoroughly as is needed, or as could be done under our present knowledge of the etiology and pathology of diseases. As a State Board, ours of Indiana is one of which the people should justly feel proud.

With the small sum of five thousand dollars placed at their disposal, they have done a grand work during the past year. They have instructed physicians and public officials throughout the State how best to protect the masses against diseases; they have had every school house examined, every corporation inspected, together with jails, asylums, etc.

They have gathered, classified and presented to us, in a neat form, a very valuable set of tables of the vital and sanitary statistics of our State, and with them much valuable information of a general nature. They have performed many other good works, but under the present appropriation it is impossible for them to give the personal and minute attention to many matters of vital importance to our people.

Without thorough and competent management, and the proper enforcement of any and all matters pertaining to public health, even to the remote details, looking to the protection of the individual as well as the masses, any system projected for such purpose will ultimately fail.

With the small allowance of five thousand dollars it is impossible for our Health Board to give this subject attention that would be required under a proper regulation of this subject. Its executive officer should be enabled to visit and inspect personally each county of the State, and especially all public institutions therein at frequent intervals, as in this way only can he certainly know the State to always be under proper sanitary regulations.

Our people should be thoroughly informed on all matters pertaining to contagious, infectious and epidemic diseases, and the dangers therefrom fully portrayed, and the best means of protection fully set forth. Our schools should be furnished good and wholesome works on sanitation, and the teaching of them duly enforced, that the coming generation may be made familiar with all the knowledge we possess, or may acquire, on the subject. Teach the individual how to protect himself, and then we will have the most intelligent protection possible.

This can not be done by any board of health on five thousand dollars a year. We believe that an emergency calling for a more extensive and thorough work at the hands of our State Board is upon us.

We believe also that the report of said board for year ending September, 1888, proves the existence of such an emergency.

On page 149 of said report, the secretary says, "Phthisis pulmonalis leads all other diseases in its destruction of life."

"The statistics of this country show that one-eighth of the deaths are due to consumption." "Many sanitarians now consider this disease a preventable one."

"For many years it has been suspected, and is now believed by many, that consumption of the lungs is a true infectious disease." As convincing evidence on this point, we add in this connection, a few quotations from Annual of 1889, by Whittaker.

"The bacillus tuberculosis, the one *fixed fact* in the pathology of the disease, is now universally regarded as the acknowledged center about which all the phenomena of the disease must revolve."

"The definite diagnosis is the recogniton of the bacillus in the discharges of tissues, and the therapy the use of the agents which will destroy it."

"The prevention of phthisis, that is, of the localization of tuberculosis, the main expression of the disease, consists solely and simply in the destruction of the sputum of tuberculous patients."

"The true treatment is prevention."

So we might continue to quote from the best authority on this point, but as we now consider it merely a useless waste of words to prove an accepted and recognized fact, and one not now longer disputed, we will call your attention to death tables of reports of 1888, as further evidence that action is demanded on this question. Our population in 1880 was given as 1,978,362. The total deaths for the year ending September 30, 1888, was 18,032. As to cause, 540 were reported unknown; and 811 from violence; deducting these from 18,032, leaves 16,672 the number of deaths known to have been caused by disease. This number all physicians know to be quite low, as death returns are not well reported in many counties. We will estimate the number at 20,000 as being nearer the truth.

Counting our population at 2,000,000 in 1888, would give us a death rate of one to every one hundred, which, as compared with other countries, is large, much larger than it should be. Again, from same table, we learn that 4,588 of these deaths were due to zymotic diseases, and 2,229 to tubercular, making a total of 6,817. Increasing this number upon the same ratio as the former (total number of deaths), we will have at least one-third of the deaths from diseases, in our State, due to these two classes alone. Again, in "Grouped Ages," of same table, we find that 4,658 of said deaths occurred under thirty years of age More than two-thirds of all deaths from zymotic and tubercular, and nearly one-fourth of all deaths, from all causes in our State. Thus we discover the destruction daily going on among the youth of our land. Who can estimate the value these young lives may have been to the State? Had we been able by sanitary instruction to have preserved the life of one, it would have been, if my son, or your daughter, worth more than $5,000, the total cost of our State Board for the year.

The trouble with our people is, that they do not estimate the value of these questions. If a daughter contracts consumption and dies, and the son of a neighbor typhoid fever, they moan and lament, and console each other upon the belief that it is the "Lord's will," and no complaint is allowed or thought of. But, on the other hand, let two or three old cows die suspiciously, pleuro-pneumonia is at once the cry; the authorities are called on, strict quarantine ordered, etc., and if not checked the whole community is up in arms. No "Lord's will" here. These cattle are cash value on the market and the disease must be checked.

Let me say here that the will of the Lord is exercised as much in one case as the other, and no more. The cattle died from a contagious disease, so the children, simply from the fact that they had been exposed to its influence, and the two classes are alike preventable, and may with proper action be brought more or less under control. Our children have a financial worth to our State, and in fact, human life is the capital of highest value to any State. How is said capital guarded and cared for in our State?

Here we behold a strange spectacle. The lives of over 2,000,000 people, hourly threatened by, and twenty of the number dying daily from diseases that may be, to a great extent, controlled and prevented by a properly equipped Board of Health. We do not complain of the members of our Board. We believe them to be efficient, able and true, and fully capable, but more power should be given them and larger appropriations made, that they may be enabled to make their work more complete.

We would ask our Legislature to get off of this narrow-guage business of

$5,000, and do something handsome. Do less legislating on the subject of public health, for, as a rule, you know but little of the subject. Leave that part of the matter to the medical profession. You will find more and better brains there than in any other organization. They have made sanitation what it is; they have given you all the little knowledge you now possess on the subject; they have given it to the world free of charge.

There is one thing you can do. You can appropriate money. The law gives you that power, and you can make a good bargain. You can pay out money and preserve and protect human life. We ask you to do this. Over 2,000,000 people are looking to you for protection. All they have that depends on health and life is at stake.

The air we breathe is alive with the tubercular bacilli, our drinking water teeming with typhoid bacilli, and behind them comes a long train of bacilli too numerous to mention here. They are daily destroying the youth of our State, breaking up our homes, destroying our happiness, interfering with our social and commercial interests, and leaving a long train of sorrows, woes and disappointments behind them.

Wipe them out of existence, and our mortality tables will become much less, valuable lives will be preserved to the State, home and social circle, and the average duration of human life, the great boon of all, will be lengthened. In the name of humanity and the citizens of your State, we ask you to establish such a thoroughly equipped Health Board for us as none can make better.

MICRO-ORGANISMS.

BY R. O. CRANDALL, M. D.

Sanitary measures in these latter days are greatly modified in consequence of our increasing knowledge of septic micro-organisms.

True the same ancient methods are frequently employed to abolish or prevent the formation of culture media for these organisms, but with a scientific knowledge of the nature and habits of these creatures, and their ravages upon the animal and vegetable kingdoms, especially upon mankind, obtained through our observation of disease and mortality, in which they are prime factors, we can place at least one foot upon a comparatively solid foundation.

In lieu of conjectures regarding some unknown septic agency founded upon external manifestations, we have scientific facts upon which to base diagnoses and treatment.

We have been groping in a darkness that by many was distinctly felt, but striving with a vigor and persistence that insured success.

The dawn has appeared. Sanitation has become a science and many of its measures are applied in a scientific manner, and with reliable and definite results. The benefits to mankind through prevention of disease, and the vastly increased average length of life are incalculable, and distinctly due to the indefatiguable labors of a class of men as unselfish as any that ever trod the face of the mother earth.

The view from this elevated site of observation is refreshing indeed, but the anticipation of what will be realized when the summit is reached excels all else in this direction.

Sanitary inspectors are not omnipresent, neither are they always full of knowledge, and some are not noted for promptitude or efficiency, whence dire consequences often result.

If sanitarians possessed all the virtues here negatively mentioned it is hardly within the bounds of possibility that the contagious and infectious diseases could be abolished.

But through observation and experience, we know that the above-named diseases have been and are now being notably restricted, and the mortality caused by them markedly lessened by scientific sanitation.

Hence the necesssity of an acquaintance with the septic organisms, to which each of these diseases is confessedly due.

Several years since I brought to my office, upon a cover glass, a specimen of the deposit or secretion from the tonsils of a patient convalescing from a severe attack of diphtheria, for microscopic examination, by an expert microscopist.

The characteristics of the septic germ of diphtheria, then studied, have partially faded from my recollection, but the fact that the microscopist, who had not seen my patient, detected also pneumonia (which I had not recognized) by the presence of the pneumococcus, caused a sensation of surprise and chagrin that remains impressed upon my consciousness to this day.

The broad hint furnished by the above incident, being acted upon, has many times equipped me with a positive affirmation or negation impossible under other circumstances.

Listerism, or antiseptic surgery, has minimized the dangers from surgical operations, greatly reduced the rate of mortality and notably extended the domain of legitimate surgery.

A like advancement has been realized in the treatment of septic diseases through prophylaxis autidotes and scientific instead of empirical measures.

To the many who assert that they take no stock in septic organisms as a cause of disease, it may be positively affirmed that "the world do move."

A French scientist has asserted, if not demonstrated, that one species of bacteria is an important factor in the process of digestion, and physiologists are now inclined to attribute many of the changes that take place in the contents of the intestines in health to the activities of micro-organisms.

In his last edition of Physiology (18 9) Foster gives the micro-organisms of the intestines (and they are legion) credit for a number of important changes in the contents of the intestines. On page 477 he says:

"In dealing with the action of pancreatic juice (249) my attention was attracted to the difference between the results of pure tryptic digestion and those obtained when bacteria or other micro-organisms were allowed to be present.

"We saw that indol, which gives the fecal odor, for example, was the product of the action of these organisms, not of trypsin.

"Now indol is formed in varying quantity during the digestion which actually takes place in the intestine, some of it at times appearing in the urine as indigo, yielding the substance indican.

"Moreover, bacteria and other micro-organisms are present in the intestinal contents.

"Hence we must regard the changes taking place in the intestine, not as the pure results of the action of the several digestive juices, but as results modified by or combined with results of action of micro-organisms.

"We spoke of bile (247) as being antiseptic, but this must not be understood as meaning not that the presence of bile arrested the action of all micro-organisms within the intestine, but that it modifies their action, keeping it within certain limits and along certain lines."

He refers at length to the action of micro-organisms that produce lactic and butyric acids in the intestines: "Thus, during the transit of the food through the small intestine by the action of the bile and pancreatic juice, and possibly to some extent of the succus entericus, assisted by various micro-organisms, the proteids are largely dissolved and converted into peptone and other products, the starch is changed into sugar, the sugar possibly being in part further converted into lactic or other acids, and the fats are largely emulsified and to some extent saponified," etc., etc.

If this evidence is conclusive, it is logical to assume that many other vital processes are carried on or assisted by these organisms.

On the other hand appears the scientific fact that most and probaly all contagious and infectious diseases are due to the presence of these infinitesimal organisms, the malthusian rapidity of generation of which outstrips our powers of calculation, and to the ravages of which upon the organs and tissues they particularly effect, should be charged the major part of all mortality from disease.

In this connection I suggest that the various manifestations presented in malarial disease appear to be due to a like variety of species of septic micro-organisms; the recurring paroxysms mark the circle of existence of one generation, consisting of infinite numbers; the chill designates the time of full development of the colony; the fever, the probable septic effect of the secretions, or efiete bodies of the entire generation, and the sweating, nature's effort in one direction to eliminate the poison from the physical organization.

Again, that these malarial septic micro-organisms, successfully antagonize the typhoid fever germs in their struggle for existence, has often been suggested to me by the fact that typhoid fever is not indigenous to this locality.

Unlike the bacteria termo, which being assisted to make an assault upon the tubercle bacillus in its favorite intrenchment, the lungs, utterly failed to drive in the outposts.

To illustrate the inherent power of these and kindred organisms, by permission I quote the details of a discovery made in February, 1889, by the distinguished scientist and microscopist, Professor Manly Miles, of Lansing, Mich., given to the public, I believe, in a paper read at the meeting of scientists in Toronto last September.

Not having read the paper I quote from private letters:

"I had put into each of a number of transparent test tubes, each containing about two inches in depth of beef broth or agaragar as culture medi, $\frac{1}{10}$ of a drop of a solution from which all organisms except the soil microbe had been eliminated, intending to study their characteristics."

"More important matters occupied my time, and the tubes were undisturbed for several months."

"At this period, wanting a test tube, the cultures were removed from some of the tubes above mentioned, the tubes washed with water, alcohol acids and alkalies, without effect in removing the dense opacity in the glass."

"The inner surface of the tubes was then scraped with a metallic scoop, by which means a quantity of fine particles of glass was removed."

"The tubes were all similarly acted upon, only varying in the degree of opacity, and affecting the whole surface in contact with the culture media."

"The inference was clear that in the absence of other possible agency the soil microbe grew fat and multiplied exceedingly in the congenial culture media, and after having exhausted the nutriment therein contained, attacked the glass with the astounding result above described."

In a letter dated March 16, 1889, the Professor gives an account of some later studies, as follows:

"I am fully occupied with my soil microbes, and the results are not only encouraging, but remarkable.

"To one who has been taught that the stores of soil fertility were frequently locked up in the form of insoluble silicates, the fact that microbes can decompose these silicates so that their potash and lime can be made available for plant food, is a significant link in the chain of natural phenomena that must be of importance.

"Truly there are more things to be taken into account in the economy of living organisms than we have dreamed of in our short-sighted philosophy.

"I have tubes in which the etching is very much more marked than in the one I sent to you.

"For several weeks past I have been watching a particular family, of which I have ten or twelve colonies, as it was peculiar in its behavior, so that I have been inclined to call it a new species. It produced nitric acid, and differed from other forms of soil microbes in leaving the liquid in which it was growing perfectly clear, the indications of its growth being confined to the surface in the form of zooglosa.

"Yesterday on cleaning up one of the tubes in which this species had been growing for several weeks I found a beautiful etching on the bottom of the tube like a geometrical spider's web, where the zooglosa had fallen down and lay in contact with the glass.

"This was a surprise to me, as I had thought it probable that the etching would be done near or at the surface.

"That is to say, I had presumed to form the opinion that when the microbes went to feeding on the glass, they would need a good supply of oxygen to sharpen their appetites.

"This seems, however, to be a mistake, as they have taken their needed potash and lime (they were on short rations of these articles) from the glass, when at the bottom of the tube where the supply of oxygen must be exceedingly limited.

"They are evidently 'right smart' chaps, and they appear to be able to hold their own in the struggle for existence.

"The culture media are in liquid form and about two inches deep in the tube.

"I find that by seeding one of these tubes with one-tenth of a drop from another tube, in five and a-half hours the whole liquid is swarming with them, so that one-tenth of a drop smeared over a cover glass when placed under the microscope shows innumerable numbers of them."

A striking analogy apparently exists between these micro-organisms as regards their relations to, and operations upon, the animal and vegetable kingdoms.

On either hand some appear benign and beneficial, others are malignant and destructive in their effects.

The function of the soil microbe, or at least the result of its struggle for existence, appears to be the conversion of silicates in the soil, which are insoluble under ordinary conditions, into food that can be readily appropriated by plants.

This demonstration of the powers of the soil microbe, an organism similar to those present in infectious and contagious diseases, confirms our facts and tends to vitalize our theories regarding the latter, and should confound those who insist that these organisms are present incidentally only, and are not the prime cause that they occupy a field prepared for them by disease due to some diverse agency.

The immense inherent power and fecundity of these micro-organisms suggests their ability to construct a continent after the manner of zoophytes, in building islands from the depths of the sea, were it not for the known fact that they are disintegrating, inorganic, solid substances, which then enter into the life and growth of perishable vegetation.

An inexhaustible field for investigation truly, in which in proportion to the extent and exactness of our knowledge of these organisms, will our treatment of disease, in which they are prime factors, become rational and scientific in both kingdoms.

RELATION OF CLOTHING TO HEALTH.

BY JAMES F. HIBBERD, M. D., L. L. D., RICHMOND, IND.

It must be obvious to every intelligent person who looks thoughtfully at the subject, that when a man in good health remains in good health, it is due to one or two circumstances, namely: He has either not been exposed to the causes of disease, or he has been able to resist these causes whenever he was exposed to them.

Sanitary science and art deal with these two factors of sound health, and with nothing else. The purifying of the soil about dwellings, sub-surface drainage, filling up ponds, and removal of offal; ventilation of houses of habitation; isolation of persons laboring under communicable diseases, and disinfecting apartments vacated by them, and the whole system of quarantine, are so many measures to prevent the germs of disease from coming in contact with those who might become victims of the disorder to which they belong.

But with the utmost care that can be exercised, it is not possible to always prevent the causes of disease from coming in contact with the members of the human family. So far from this, indeed, the truth is that every community, if not every individual in it, is constantly in the presence of some causes of disease, and when a community, or an individual member thereof, escapes illness, it is due to personal ability to resist these causes. This is made manifest by observing the effect of some definite cause on a number of persons equally exposed, for example—six young men have been to the same degree exposed to the small-pox; two of them have not been vaccinated and take the small-pox in all its horrors; two have been imperfectly vaccinated and suffer an attack of partial small-pox, that is varioloid, with only slight inconvenience, and the remaining two have been thoroughly vaccinated and suffer nothing at all.

In these examples the resistance to disease was established by artificial means, that is, by vaccination, but such resistance is frequently brought about by the natural developments of the body, and is just as valuable, indeed much more so, if we take into consideration the extent to which it prevails, for we are led logically to the conclusion that when a number of persons are in common exposed to a cause of disease and only one-tenth of them become affected, the other nine-tenths were so constituted as to successfully resist the cause. If an epidemic of any kind invades a community, say, for instance, cholera, and not one-half the people contract the disease, the escape of the majority must be attributed to their insusceptibility to be impressed by the causes of cholera. And again a district of country may be invaded by malarial-fever. Malaria is carried by the atmosphere about us and which all must breathe. It is therefore quite certain that in this affected neighborhood every person must be exposed to malaria, and yet it would be counted a very severe endemic if one half the inhabitants were down with the fever, and in such case we can conceive of no reason why the well escape, except that they were able to resist the morbid influence of the malaria while others were not. Persons may be so constituted that they readily resist one set of diseases and as readily succumb to another set. A man may pass through a scourge of cholera or an endemic of malarial-fever, and yet be among the first victims of epidemic dysentery or erysipelas, or still further, he may be an active assistant in caring for the sick during an invasion of diphtheria one year and suffer no ill, but the next season diphtheria returns and he comes down with it like others.

Just how it is that a person will resist disease while others yield to it, or why it is that he will at one time escape a given disease and become its victim at its subsequent appearance, is not clearly seen, but it seems a reasonable conclusion that perfect health is the best safeguard against the successful lodgment of the germs of almost all human maladies. Certainly there will be general assent to the proposition that a person in sound health can undertake the duties pertaining to social, industrial or amusement life with no apprehension that illness will come of it, while a person in unsound health would either decline such undertakings or fail in their accomplishment. Another almost self-evident proposition is that the succession of the seasons is essential to the highest and most efficient development of man, physically and mentally. If the truth of this statement is not apparent on its face, its verity is easily established by calling up the fact that in all historic time the progress of the world in all things that make for the betterment of mankind has been accomplished, for the most part, by the inhabitants of the temperate zone. The alternations of the summer sun and the winter frosts seem to be a necessary factor in developing the most robust physical frames and the most practically acute minds. Residents of equatorial regions have the necessaries of life furnished them almost without labor, so that but little industry is demanded of them for bread winning, but if called to make great exertion their home beneath a continual summer sun and in a perpetual high atmospheric temperature would be found to have established such enervation as to render them incapable of long enduring labor. And on the other hand, the denizens of the polar regions have such constant struggle with almost perpetual ice and frigid air that the scant population can barely support their diminutive bodies, and find small opportunity to cultivate their minds.

It follows, therefore, that we must look to the inhabitants of temperate climates for the sound health that shall constitute man's most reliable resistance to the causes of disease, and as a corollary, we must believe that the summer's heat is essential to the production of the fruits of the earth for his sustenance, but their cultivation reduces his vigor and it requires the tonic of winter's frosts to recuperate his vital energy, and establish and maintain his resistance to the causes of disease.

Of course it is not the extremest degree of cold of even this latitude that one must be exposed to in order to enjoy the tonic influence of low temperature, but it must be a regulated exposure to a temperature far below the frost line, frequently repeated, that will insure the invigorating influence of cold essential to the best sanitary estate of man.

Accepting this reasoning it must be apparent that whatever arrangements are carried into effect that forbids the people coming in contact with the proper degree of cold, is to rob them of the pleasure and the profit of our temperate winters. Accordingly we find that people who are confined in over-heated houses are not the healthy people of the country, and it is equally true that people who are kept too warm by any means are the ones likely to be unable to resist the causes of disease, and fall into acute disorder or general ill health.

It follows, therefore, logically, that if one dresses too warmly in winter one loses the tonic influence of the season, and thereby lessens the power to resist the causes of disease, and this is the point I desire to make prominent in this paper. It is my firm conviction, after many years thoughtful observation, that the well-to-do people of this latitude, or at least a large proportion of them, dress too warmly, thereby reducing their resisting power to the causes of disease, and, what is still more unfortunate, as I am apt to believe, the overdressing itself not infrequently becomes a cause of disease, and this it does by bringing disorder to the skin as the first step, and then through the sympathetic relations of the skin with other parts of the system. Any organ of the body may suffer as a further step in the disturbance.

Let us for a moment inquire into the nature of the skin and the relation it bears to the internal organization of our bodies. Dr. E. M. Hunt, in his Principles of Hygiene for the School and the Home, has this to say of the skin: "It is, therefore, not to be regarded so much as a covering as an organ having complicated and essential relations to the whole system—an outspread sheet of membrane having offices similar to the more concealed sheets of folded vessels packed away under the name of lungs or kidneys, and having in addition a collateral relation to the various and internal physiological processes of life."

In confirmation of this picture of the skin, and its importance as the great organ through which we have physical contact with the outside world, we need but reflect that it has a very complicated structure, is richly endowed with blood, and has a complex distribution of nerves. Its physiological functions are, in addition to its exclusive operations, varied and far-reaching, assisting the lungs by eliminating about one-fortieth of the carbonic acid and a portion of the effete organic matter, and in like manner aiding the kidneys by secreting about one-fourth of the water waste of the system.

It is obvious that such an extensive organ, so richly endowed, and of which such important direct and vicarious work is required, can not have its normal activity seriously impeded, perverted or overtaxed without producing disorder in other parts of the body. Such is the organ that comes in contact with our clothing, and through which the garments we wear make their impression for good or evil.

Clothing has a triple purpose to serve with us: First, it should meet the just demands of modesty; second, it should satisfy the cultured esthetic taste in dress adornment, and third, it should protect against meteorological vicissitudes, the heat of summer, the cold of winter and humidity at all times—rain, fog and snow in their season.

At present we will confine our attention to the clothing appropriate to winter temperatures, and by way of preface, will say that the popular idea is that in selecting winter garments, the one thing needful is to be sure that they will be warm enough without too much interference with the motility of the body at large, and the limbs in particular, with apparently never a thought that they may secure too much warmth. The real value of winter dress lies in that it shall maintain just sufficient warmth, and at the same time allow of adequate ventilation, for it must not be forgotten that the skin, for its healthy action, demands as efficient ventilation suitable to its activity as do the lungs for the perfection of their work.

In this connection it must be constantly before our minds that clothing does not create temperature, the only way it contributes to our warmth is to prevent the escape of the heat produced in our bodies by the processes of nutrition. These processes are continuous with our lives, and with the radiation of heat from our skins there is the constant elimination of the insensible perspiration and certain unctious matters which must be carried off by appropriate ventilation, otherwise their accumulation on the skin and the clothing soon become offensive and themselves an irritant cause of disease. It must be within the knowledge of almost every one, that when a current of damp, cold air strikes the skin of a person, incompetent to resist its effect, such person will take cold, that he will have sneezing, sore throat and cough, or perhaps pneumonia, or pleurisy, or it may be rheumatism or inflammation of the kidneys; the rule in such cases being that it will be, not the skin where the cold current struck the surface that suffers, but that interior organ which is the victim's weakest part, least able to resist a disturbing cause.

Popular opinion holds that where a person is subject to colds and has them frequently, they ultimately result in consumption. While this is not literally true, the actual course of events lead to the same end. Colds, popularly so-called, are an inflammation of the mucous lining of the respiratory tract, while consumption proper is the activity of the bacillus tuberculosis in the lungs. This bacillus floats in the air when dry, and probably is breathed into the lungs of every person in this country sometime during life, but in those who have adequate resisting power it dies and does no harm, but in one whose resisting power has been by any cause reduced to a sufficient degree, the germ finds pabulum, thrives, multiplies and produces consumption. It may happen that one who has had sufficient resisting power to protect him from the inroads of the bacillus has his general condition lowered and his lungs weakened by repeated bad colds, so that he can no longer resist the bacillus which now finds lodgment, and consumption is inaugurated.

This is the relation between bad colds and consumption, and it is sufficiently close to warrant the popular opinion on the subject, erroneous though it be. There is no pretense in the statement that over-clothing and colds have this relation; when one has more clothing than needful in cool weather, too much natural heat is retained by it next the skin, which not only prevents the dispersion of the insensible perspiration, but it increases it to sensible perspiration and the skin is kept too warm, moist and soft, and is in precisely that condition most surely and most quickly affected by a current of cold air; then follow a chilled surface, checked perspiration and a bad cold or other distemper. Moreover, the party thus disturbed feels that the mischief was brought about by his getting chilled and he accordingly adds more clothing, inducing more perspiration, a softer and less resisting skin and a deeper and more serious cold.

Let us remember that it is not the poor and insufficiently dressed people that catch colds. Inadequate clothing produces other ills, but it is the over-dressed, well-to-do people who suffer from colds produced by improper clothing. Moreover, it is in the changeable weather of autumn and spring that colds are most prevalent. In the fall the garments have been prepared for the winter, are too warm for the autumn, overheat the surface, reduce its resisting energy, and the colds follow exposure. In the sharp frost of winter the clothing is suited to the low temperature and all goes well. When the spring opens the winter clothing is continued, is too warm, overheats and moistens the skin, and a cold is the result, or it may be a rheumatism, a pleurisy, pneumonia or some other internal inflammation.

To avoid these ill consequences we should dress to suit the season, the exposure to which we may be subjected, and the amount of exercise that may be demanded of us. But in adjusting our clothing we should not fall into the mischievous idea, so widely entertained, that we must guard our bodies against all sense or knowledge of cold by contact with it. On the contrary, we should bear in mind that, for the maintenance of our skins in healthful condition, in such sound, vigorous resisting state that it will not only protect us from immediate danger of disease, but prepare us for the highest enjoyment of life, we must feel the low temperature and accept it as a tonic having the virtue of invigorating our whole system, with an especial service in strengthening the vigor and resisting power of the skin. Of course there is a degree of low temperature that must be guarded against in the preparation of our clothing, and it is not an easy matter to define the exact amount that one may most profitably encounter, but it may be stated in a comprehensive way that it will be more for those who labor or take abundant rational exercise, and less for those who loiter. And it may be laid down as an approximately correct guide that any sound person may profitably encounter outdoor low temperature to any extent of discomfort, from which he promptly and completely recovers on reaching suitable quarters, and for the best hygienic results this experience of a sense of frosty air when in its presence must be the rule and not simply an exceptional experiment.

Let it be distinctly understood that all this dissertation concerning the sanitary conditions of clothing has relation exclusively to persons in sound health. . A person in feeble condition or really ill has altogether different relations to low temperatures, and his conduct and dress in connection therewith should be exclusively regulated by his medical adviser.

Age has an important bearing both as to quality and quantity of clothing during the frosts of winter. In this essay the question has been discussed as it concerns adults. Old age requires more clothing than active adult life under similar circumstances, and admits of less attention to ventilation; but children demand lighter clothing than adults, and should have more attention to ventilation. My observation has led me to the conviction that many children are kept fretful with too much clothing, and that of an irritable character in contact with the skin, thereby inducing illness direct or leaving the victims an easy prey to any cause of disease to which they may be exposed. Besides this, watchful mothers, in their mistaken affection, put too much cover over their children in bed, with the result that as soon as the child becomes too warm, his skin soft and its resistance lessened, his reflex activity automatically rebels and he kicks clear of the offending covering and quite likely takes cold. Children as a rule require much less covering during sleep than adults, and all parents and nurses should realize that when a child in health in his sleep kicks off the bed covering it is because he has too much of it.

SUMMARY.

The more salient points submitted in this paper are:

1. Man's chief safeguard against disease is a state of sound health which resists the causes of disease.

2. The proper management of the skin is an important feature in sustaining sound health.

3. Winter temperature is valuable in the management of the skin.

4. Well-to-do residents in this latitude, belonging to every walk in life, are apt to dress too warmly.

5. Too much clothing, insufficiently ventilated, overheats the skin, softens its tissues, reduces its resisting power and opens the door for bad colds, many acute internal inflammations and a long list of serious chronic disorders.

MEDICAL EDUCATION.

DOUGLAS C. RAMSEY, M. D.

It may be truthfully said that this subject is almost threadbare. However, the larger number of articles written have been composed by those directly or indirectly connected with medical schools; therefore, I think a few thoughts on the subject by one engaged in private practice will not be amiss.

It will be admitted by all that one should possess a good preliminary literary education before entering the life of a medical student, but it does not all lie in this, as a great many would try to make believe. There is something else.

It is amusing to read some articles written on this subject, notably two of recent date by two teachers of medicine in New York City, connected with a school that requires only two courses of lectures for graduation. In this progressive age it is a burning disgrace to the profession, school and teachers that their requirements are no greater, and, before giving advice about medical education, should lengthen very considerably their terms of lectures required before graduation. The time has been when two courses of lectures were all right, but that time has passed. The public has a right and ought to know that there has been proper preliminaries taken, and a sufficient time spent in taking them by students before entering the practice of medicine.

The majority of the sick recover, and many of them under very different treatment, consequently we can not reason with the people on the subject of good and bad doctors in a manner that they can understand and appreciate. Therefore, the only safety and protection for laity and profession alike is to know that the physician has taken the proper preliminaries before entering the practice of his profession.

A medical college that requires only two courses of lectures for graduation at this time is as far behind the times as one that ten years ago required only two terms, both limited to the same year.

Another great drawback to the proper education of students is a tendency of a great many of the profession to send their students where they can get through quickly, or sending them where they have heard some noted man graduated, or to some school with a high sounding name. He who sends students to a two-course college now has not the best interests of the public or his profession at heart. No school has the moral right to graduate any one incompetent to practice his profession. The somewhat famous but very weak rejoinder once made by a teacher of medicine to one who sent many students to attend medical lectures: " We can not make good doctors out of the material you send us. Send us better material and we will make better doctors." Now, if the material sent was unfit, why take the responsibility of graduating and sending it out to practice? The only reason that could be offered would be the fear of poor patronage on the part of unmeritorious students in the future. Surely the graduation of any student is not compulsory. No city with less than 200,000 inhabitants can properly maintain a medical college, for the clinical facilities can not be sufficient for proper instruction in all departments.

The great tendency of doctors in cities of 20,000, 50,000 and 100,000 inhabitants to band themselves together for the purpose of teaching medicine is wrong, and lowers the standing of the profession and should be severely discountenanced by those controlling students by withholding their patronage from such institutions.

There are as good medical schools in the West as there are in the East. For nine years the St. Louis Medical College, of St. Louis, Mo., has required and exacted from its students before graduation evidence of a literary education and obligatory three courses (of five months each) of lectures within three different years. It lately lengthened its courses to eight months. There are three other regular schools, one Homeopathic and one Eclectic in that city requiring but two courses of lectures for graduation, and to the great discredit of the profession and public the two-course schools receive the largest number of students, and the number at the St. Louis school has decreased probably one-half since adopting high requirements, but all honor to the faculty who have shown that they are teaching to better their profession and serve the best interests of the public, and not alone for student's fees.. They have never swerved, and one consolation is, they see the fruit of their good work in the large majority of the competitive hospital of that city, appointments being awarded to their graduates.

The people in general probably hear more of Bellevue-Hospital Medical College of New York City and Jefferson Medical College of Philadelphia than any two other medical colleges in this country, because there are a very great number of students who attend them, but on examination of their announcements you find that they require but two courses of lectures for graduation, whereas the College of Physicians and Surgeons of New York City and the University of Pennsylvania of Philadelphia require three full courses of lectures for graduation, and you hear but little of them among the people because they have not the high sounding names of those above mentioned. To the great credit, however, of the profession and public, the College of Physicians and Surgeons has entered a tide of great prosperity by a large increase in its number of students.

Another good sign is the refusal lately of the Minnesota State Board of Health to register a diploma issued by the Jefferson Medical College of Philadelphia on account of its courses of lectures not being long enough to fulfill the requirements of their new State law.

Still another great advance is the adoption by the Illinois State Board of Health of a resolution requiring all colleges after the 1890 and 1891 session to adopt a four (4) years' course before their diplomas can be registered in that State. This Board of Health has probably done more to protect and advance legitimate medicine than anything ever yet established.

Self-interest can not regulate medical education, and those who in this day and age teach in medical schools requiring but two courses of lectures before graduation are certainly controlled by self-interest of some kind. The only way to ever obtain general good medical education for this country is to appeal to the physicians in private practice, and the general public. As this article is intended for the public at large, in a public health report, I hope it will serve the purpose of awakening and enlightening the people to some extent, on some of the unfortunate surroundings of the medical profession, caused by the careless attitude assumed on this subject by a majority of both the laity and profession.

IMPORTANCE OF OUT-DOOR EXERCISE.

BY LEWIS N. DAVIS, M. D., FARMLAND, IND.

For a number of years I have been convinced of the deficiency in a general knowledge of the importance of exercise in the open air. In the advance of civilization, with the rapidly increasing population, the subject seems to have almost disappeared from the public mind, and quite as nearly to have vanished from the common customs, particularly among the female population.

With the present rate of immigration, our population doubles itself in the course of thirty years, and the necessity of keeping constantly in view the value of such a health-preserving element as out-door exercise, can scarcely be exagerated.

Large numbers of our population fall victims annually to tuberculosis and kindred wasting diseases, which are superinduced by the foul air of crowded residences, with an insufficient time allotted to out-door life.

Perhaps consumption claims one victim in every seven of our population. Four centuries ago the disease was unknown on this continent. Our vaunted civilization, with its detruding influences, has now brought our mortality list up to that of the older and more populous countries of Europe.

The blood of our European ancestors was not so pure as that which coursed the veins of the aboriginal American. The former's habits of life were not calculated to maintain even the bodily vigor inherited; while the strength of the latter was in no wise deteriorated by confinement or other civilized influences. In proportion as the Indians were brought under the civilizing influence of the white race, they become subjects of chest disease.

Consumption and the allied wasting diseases are not inherent either in the air or soil of North America. Such disorders have been transplanted from Europe.

When the rod and the chase formed the industrial pursuit of the Indian, and the banks of the bubbling brooklet his place of bivouac, tribal warfare his pastime, he was never known to become the captive of man's most common foe in the list of diseases—consumption. He breathed all the air on the expanseless continent uncontaminated by the vitiating influence of civilization. He exercised with zeal and moderation in the companionship of the giant trees of the forest. With a population of one or two souls to the square mile, his hunting grounds were almost as limitless as his atmospheric supply was bountiful. There is now a population in the United States of, perhaps eighteen persons—in our own State about sixty--to the square mile. They have the vices of constitution, together with all the deteriorating habits and customs developed through many generations by social and civilized usages.

Admitting the necessity of a specific element in the production of consumption, the inherited and acquired predisposition are almost equally essential. The soil must be fertile for the seeds of disease to prosper. In-door life and sedentary habits, with impure air as the universal attendant, and with the inherent constitutional tendency, vouchsafe the ideal subject for phthisis.

Constitutions enfeebled by heredity, nurtured and educated in the belief that exposure (out-door exercise) will be followed by fatal results, fertilize the soil for the growth of grave wasting diseases. Such persons minimize their physical resistance by bodily inactivity, and by breathing vitiated air. They constitute the large army of dyspeptics and life-long invalids, most of whom ultimately die of consumption.

No matter how differently some authorites may view it, my own observation teaches that among this class of subjects we find the first to succumb to the ravages of typhoid, scarlatina or other epidemic poisons.

If they live through an acute attack of any prevailing disease it only hastens the arrival of their mortal foe, which may have been shadowing them from birth.

Construct public and private buildings as you may with reference to ventilation, and the supply of air to each individual who may occupy them can never approximate that which is afforded under nature's blue canopy, in open space. And here, according to nature's laws, man should spend the better part of his time.

Among the negroes of the South, in the days of slavery, consumption was almost unknown. They were regular and systematic in their habits, and labored very largely in the fields, in open air. Within twenty-five years since they have flocked to the tenement houses of towns and cities, their mortality rate has more than doubled, and consumption is very rife among them.

Twenty-five per cent. of the population of Glasgow live in one-room tenement houses. Perhaps the same may be said of other European and some American cities.

In Glasgow the death rate is 38 per thousand.

The death rate per thousand the United States over is about 15 per thousand.

In London the average number of people to each residence is about 9; her death-rate is 18 per thousand. New York, situated in at least as healthy a locality as London, has 16 persons to the residence on an average, and a death rate of 21 per thousand.

It would scarcely seem possible, in country towns and moderately populated country districts, that evil should result to the occupants of public or private houses from vitiated air, due to overcrowding; or that there should be any deficiency in the amount of out-door exercise. Nor is it so likely to be the case as in such cities as have been cited. We have neither the crowded tenement houses or the filth and squalor of large cities, but many of our people pass too much of their time indoors. They do not properly appreciate the life-giving properties of open air. They are too prone to believe that if their sleeping apartments and sitting rooms are large, and if they avail themselves of the precautionary custom of lowering a window three inches at the top, they have as much pure air as is obtainable out doors; no matter about the number in family or the number of "comers" and "goers." This applies more especially to the married women of the country, whose *special* duties, of course, demand them in the house, but it is also applicable to the smaller children of both sexes.

During the long stretch of inclement weather of this latitude in autumn, winter and spring, with nothing especially inviting in the way of roads, and with no urgent duty beyond the family threshold, the mother and smaller children spend almost the entire time in the house. The children do not skate, skip the rope or romp on the straw stack only by special permission on the most favorable days, when they must be "well wrapped up," and not "stay out too long." If at school their privileges or desires for out-door exercise are not more liberal, and the impure air of the school-room is much more abundant than that at home.

The social usages of the country seem to demand of the girls, as they advance in their teens, the omission of the "old time" "rowdyism" and "tomboy habits," and the adoption of the more sedate "womanly ways" which involve a quiet and sedentary life, vastly destructive to bodily vigor, and which are of no special improvement to the moral tone.

The women may get out to the nearest market place, or visit a sick neighbor occasionally during the seasons of bad weather. Perchance there may be a protracted meeting at the neighborhood church, when the whole family will spend a few nights in the "revival effort."

The struggle that ensues at such revival meetings is followed at least by physical detriment, if not also by intellectual depravity. The spiritual generally predominates over the bodily forces, and the latter is whipped around in a manner altogether beyond its capability of endurance.

If the body survive the ordeal it may become a sad relic of the religious event, and pass the remainder of life bereft of endurance and worldly ambition. No habitable place in any quarter of city or country presents a less inviting atmosphere for the preservation of the functions of the human body than that afforded by the country church during the progress of a "great revival."

In a sanitary sense, such places are in many instances veritable "death traps," and the women who leave their homes to enjoy such "spiritual feasts," do so at a wonderful risk of impairment of health. "Getting out" to meeting when the church is crowded and great religious excitement prevails, is in no sense a substitute for healthful open air exercise.

The great success attained in the treatment of wasting diseases at Davos, Switzerland, is owing to the strict observance of three cardinal elements, viz.:

First. Exposure to the cold air.

Second. Hardening the skin by friction, ablutions, etc.

Third. Substantial diet.

The climate of Davos especially favoring the application of the first requirement in the treatment, gives it a degree of success attained, perhaps, at no other resort in the world for the treatment of chest diseases, that is, breathing the *pure* unconfined air. The patients at Davos breathe the air as the Indians breathed it on this continent four hundred years ago, uncontaminated by the exhalations from other human bodies. Our climate does not favor the adoption of this important prophylactic and curative measure at all seasons of the year, but the people have too much fear of rigorous weather; they will shudder and close their doors against the winter's blasts, till the sunshine of April loses its inviting warmth, and the verdure of May its charms; housed up within the narrow sphere of a small room, they almost live and die in the same quarters. Habit has everything to do in enabling an individual to brook the vicissitudes of climate.

Commencing the practice before the vital forces are too much enfeebled by disease or age, with proper discretion in dress as well as the kind and amount of exercise, there are but few days in the year, even in our latitude, that are unfit for out-door exercise.

Women should be urged to make long drives; go horseback, afoot, or labor out-doors, according to their tastes and abilities—to adopt more the habits, as far as exercise is concerned, of the old market women who weather all kinds of storms —stay at home less, and go to places of entertainment in overcrowded rooms less frequently. Children should be inured to the changes of climate by allowing them to "play out" while young. It won't increase the frequency of attacks of "cold" nor multiply any other acute ailments, but it will make stronger and more robust constitutions for them when they become men and women.

Increasing density of population need not be attended by increasing mortality rate. No one factor in the whole domain of hygienic neglect and human ignorance adds more subjects to the mortality list, annually, than living shut up in the house. Be it hovel or palace, filthy or clean, in the house is not the place for people to live and *enjoy health*.

ALCOHOL AND ITS RELATION TO MEDICINE.

BY S. E. EARP, M. S., M. D., INDIANAPOLIS, IND.

There seems to be an intuitive inclination in humanity to seek those methods that are productive of exhilaration. If it be obtained by actual experience, the sole thought of momentary pleasure threatens to overrule or jeopardize the better judgment of the individual. If, by some artificial means, excruciating pain may not only be subdued, but, on the contrary, transformed into a condition of pleasure and ecstacy, the present only is given consideration, leaving the future to take care of itself. The general characteristics of humankind have encouraged the laity to have a vision of the habitual consumer when certain remedial agents are mentioned which has occasionally taken the role of the cynic—that is, never see a good quality, but never fail to see a bad one. Thus, a prejudice has been created against some of the most valuable therapeutic agents. Perhaps no better example could be cited than chloral, morphia, and alcohol. If these are to be condemned because a confirmed habitude is one of the possibilities—and observation has furnished a few wrecks of human life where the physician was not in any way responsible, but where his advice would have obviated the difficulty—then it appears that the preponderance of testimony is in favor of such remedial agents, if used as such, to be under the direct control of the physician. If isolation is strictly followed, then we find that the various works on medical jurisprudence cite cases of chronic habits, formed from the use of corrosive sublimate, cocaine, nux vomica, arsenic, Indian hemp, etc, and the argumentation would be fallacious, and not even a nucleus could be found. It appears that it is reasonable to seek the good results which may be obtained by the use of a drug, and carefully avoid the evils, which will be few, if any, when the physician is the guide in the administration. One of the most prominent of this class, we believe (in a broad sense), is alcoholic stimulants. In their application we find a slight similarity to the anaesthetics exists from the fact that we observe a well marked stage of excitement before unconsciousness supervenes, differing, however, in the respect that the preliminary stages are more continuous, and creating a greater tendency toward failure of respiration and paralysis of the heart. The *quantity* has an important bearing when used as a therapeutic agent. In small quantities the result seems beneficial, while an excess may produce a chronic catarrhal condition of the digestive track, and a change in the structure of the tissue, even to the extent of cystic formations and the accumulation of an abnormal mucous, a natural sequence being a detrimental fermentation of the food. In consequence, the principles which are intended to play an important part in assimilation and absorption are not only scanty, but changed in consistency and less active. The untoward influences and conditions are frequently present in the habitual consumer who is a pathological subject, and in this instance the good results prove to be partial failures, except so far as the continuance for an interval of reduced quantities to encourage the economy of the hoped-for abstainer. In the advanced stages of this condition there is a profound, general overtaxation, and the pathological changes are such as to rarely respond happily to a remedy. The pepsine is precipitated, the secretions of the alimentary canal are below the standard in quality and quantity. This will especially apply to the glandular secretions. To particularize, one of the main seats of danger is the liver. Thus, a nucleus is formed for many of the varieties of diseases of this organ. The gray matter of the brain is over stimulated, and Dr. Hammond has explicitly stated: "Alcohol has been discovered in, and has been distilled from the cerebral matter, and it is demonstrated that it has a special affinity for the nervous matter, being found in the cerebral spinal axis and in the nerves in greater quantity than in other tissues of the body. As a result of the direct contact, chiefly, but in part, also, from the variations from the intra cranial blood currents, important structural alterations are gradually wrought in the cerebral matter. The cells of the gray matter become more or less fatty and shrunken, undergoing hyperplesia, and shrinking and condensation of the whole cerebrum ensues (sclerosis), and the cerebro-spinal fluid relatively increases. The objective evidence of these pathological changes are seen in the impaired mental power and muscular trembling of the drunken man."—*Bartholow, page* 525.

Ringe's Handbook of Therapeutics, edition of '89, February, p. 265, says in reference to quantity: "Whatever doubt may exist concerning the usefulness of alcohol in moderate quantities, there can be no question of its pernicious and poisonous effect when taken in excess. It then degenerates and injures the tissues of all parts of the body, and produces premature old age, for it causes an increase of connective tissue (fibrosis), and fatty degeneration of perenchymatous tissue (sclerosis). The lungs become prone to emphysema, the kidneys, stomach and liver become cirrhosed. Even in a state of so-called health, when the effects of hard drinking are not very apparent, they become at once evident on the occurrence of illness or accident, when the constitution manifests its undermined condition and its diminished power to resist disease. Thus drunkards succumb to illness or accident which temperate men so easily pass through."

This is not only true in a condition made prone by the constant use of alcohol when a pathological condition exists, but in general fatigue, when it is continuously used to ward off certain diseases, it is not only a failure, but lessens the power of resistance. This I have especially noticed in the harvest field, and it is the experience of the adventurers, the arctic explorers and the soldiers of the civil war. The logic of the man who expects to avoid the contagion of the infectious diseases by its use as a beverage is as faulty as the individual who uses it in the winter to keep him warm and in the summer to keep him cool. In fact, it is simply the ecstacy of intoxication and the lack of bravery which is supplanted artificially by the momentary stimulation which prompts the force of effort. The direct effect upon the body temperature and the manner of such action, or, more properly, of the direct cause, is a matter of controversy by authors of eminence, and physiology hardly seems to be a satisfactory referee; experience, however, is an important guiding factor. The effect upon the circulatory system is all important. In reference to the pulse rate the stimulation of the accelerators increases the rapidity, and the stimulation of the par vagum decreases the rate, and later there is an increase attributed to the paralysis of the nerve. It is almost a universal belief, founded upon clinical experience, that small doses increase the force of the circulation by a direct action upon the heart, while an excess has the power to produce paralysis of the heart muscle. Observers, as the result of personal experiments upon man and the lower animals, assert that there is but slight, if any, accumulation of alcohol in the body, and by direct examination of the products of elimination it is rarely found. If these experiments are conclusive, and they are confirmed by Thudichum, Anstie and Dupre, of London, it conforms with the thought that it is oxidized, and in this respect performs the office of a food. The objectors to the recognition of alcohol as a food claim that the products of oxidation are not found, and this, however, is met by the reply that the final process only is determined, and here are the products presented in the form of water and carbonic acid.

Mr. Wood says as a summation: Alcohol in small amount is an arterial and cerebral stimulant, increasing the functional activity in the nervous and circulatory apparatus, and that it is a food in the sense that it is destroyed in the system and yields force that is utilized by the organism, and that it is when in sufficient quantity a retarder of tissue changes, checking the excretion of nitrogen. [Wood's H. B., th. ed. of '88, page —.]

While it is true that alcohol administered in moderate quantities will sustain the body weight without the aid of other foods, and even has a tendency toward an increase of weight, it is for a short season only, and that it is by the general admixture of food that we obtain the best results, the digestion is materially aided, while in the more advanced steps of constructive metamorphosis it proves a valuable adjunct. This in general would apply to chronic diseases, but the acute disease must not be excluded, for during certain stages of this especial class it is preeminent. The clinic demonstrates that there are times when full doses will control the temperature, and a continuance is indicated as long as the symptoms are ameliorated, without it manifests untoward conditions, such as the distinct characteristic odor of the breath or the detrimental expenditure of some special function or organ. We consider an important office which it is capable of performing is sustaining the vital force beyond a critical period and bridging over the familiar pathological chasm in some of the diseases that pursue a typical course. In such conditions there often exists a general depression, almost a total impairment of digestion, nutrition is at a low ebb, heart failure may be temporary, with a promise of permanency, and a summation would be expressed by saying that there is a constant strain upon the vital powers, and exhaustion is almost imminent. The adynamic fevers furnish good examples, and typhoid fever would almost be a typical instance. The special line of remedies which are adapted to this class of diseases are right and indicated, but alcoholic stimulants, like the keystone to the arch, are the adjuncts at the opportune period.

In the general debility of the aged and the diseases of infancy, where there is a depressed condition of the vital powers, or where the disease seems to have spent its force and but a breath apparently separates the patient from the two worlds, this class of stimulants have opened a gateway for convalescence. The appropriateness in the wasting diseases is too well known to furnish a hackneyed comment, and when the sulphuretted hydrogen treatment for phthisis was so ably reported by the President of Marion County Medical Society I was especially impressed with an assertion made by a member in discussion, to the effect that his own personal experience had taught him to depend upon three essentials—pure air, good diet and fine whisky. The statement produced some merriment at the time, but it was apparently the nucleus of facts.

The gist of the medical properties and actions was presented in the Practitioner in a most concise manner by Dr. Lander Brunton (Waring's Handbook Thrp.), and I can not refrain from presenting it in exactness:

1. Alcohol in small quantities increases the secretion of the gastric juice and the movement of the stomach, and thus aids digestion. Although unnecessary in health, it is useful in exhaustion and debility.

2. It increases the force and frequency of the pulse by acting reflexly through the nerves of the stomach.

3. In large doses it impairs digestion by over-irritating the stomach.

4. It may produce death reflexly by shock.

5. After absorption into blood it lessens the oxidizing power of the red blood corpuscle and is thereby rendered useful in reducing temperature. When constantly or frequently in the blood it causes accumulation of fat and fatty degeneration of organs.

6. It undergoes combustion in the body, maintains or increases the body weight and prolongs life on an insufficient diet, and hence, is entitled to be recorded as a food.

7. If large doses are taken, part of it is excreted unchanged.

8. It dilutes the blood vessels, increases the force and frequency of the heart beats by its action upon the nervous centers, to which it is conveyed by the blood, imparting a feeling of comfort facilitating bodily and mental labor. It does not give additional strength but merely enables a man to draw upon his reserve energy. It may thus give assistance in a single effort but not in prolonged exertions.

9. The same is the case with the heart; but in disease alcohol frequently slows instead of quickens the pulsations of this organ; and this economizes instead of expending its reserve energy.

10. By diluting the vessels of the skin, alcohol warms the surface at the expense of the internal organs.

11. The symptoms of intoxication are due to paralysis of the nervous system, the cerebrum and cerebellum being first affected, then the cord and lastly the medulla oblongata. It is through paralysis of the medulla that alcohol generally causes death.

12. The apparent immunity which drunken men enjoy from the usual effect of serious accidents is due to paralysis of the nervous mechanism, through which shock would be produced in a sober condition.

I have attempted to review the favorable and unfavorable conditions and indications for alcohol, believeing this more properly shows its relationship to medicine.

LIST OF PHYSICIANS.

ABBREVIATIONS—R., for regular; E., for eclectic; H., for homeopathic; P. M., for physio-medical; N. R., for not reported; D., for diploma; figures 3 and 10, for number of years' practice.

This list is furnished by County Health Officers, and any mistakes that occur in spelling names, or omissions, are attributable to them.

The names of County Health Officers are printed in capitals.

Adams County.

Name.	*Post Office.*	*School.*
Aspy, H. M	Geneva	R. 3
Andrews, O. P. M	Monroe	R. D
Brayton, W. R	Geneva	R. D
Boyers, J. S	Decatur	R. D
Bergman, Noah	Beme	R. 10
Beavers, Seth D	Decatur	R. D
Coverdale, J. S.	Decatur	R. D
COSTELLO, H. F	Decatur	R. D
Dorwin, T. T	Decatur	R. 3
Ford, C. A	Geneva	R. 3
Holloway, A. G	Decatur	R. 3
Harper, J. L	Pleasant Mills	R. 10
Houghton, Asa	Linn Grove	R. 10
Hill, J. C	Pleasant Mills	R. 10
Hughes, Alexander	Monroe	R. 10
Jelleff, C. A	Decatur	R. D
McMillen, W. W. P	Decatur	R. D
Mann, Jesse E	Decatur	H. D
Mann, Mrs. N. H	Decatur	H. D
May, O. T	Monroe	R. D
McDowell, Jacob	Geneva	R. 10
Rainier, Chas	Monroe	R. 10
Sprunger, Peter A	Berne	R. 10
Trout, D. G. M	Decatur	R. D
Thomas, P. B	Decatur	R. D
Walser, J. H	Linn Grove	R. 3
Ward, J. B	Geneva	R. D
Willson, W. W	Decatur	H. D
Zimmerman, C. A	Berne	R. 10

Regular, 27; Homeopathic, 3.

Allen County.

Adams, Horace E	Harlan	R. 10
Allen, Daniel M	Fort Wayne	R. 10
Bartele, R. W	Fort Wayne	E. D
Banks, C. T.	Fort Wayne	— D
Bevier, Wm.	Fort Wayne	E. D
Barnett, W. W	Fort Wayne	R. D
Blade, Phillip	Fort Wayne	E. 10
Boswell, A. J.	Fort Wayne	R. D
Boswell, A. C	Fort Wayne	R. D
Bower, G. B. M.	Fort Wayne	R. D
Bowen, G. W	Fort Wayne	H. D
Bruebach, G. T.	Fort Wayne	R. D
Buchman, A. P.	Fort Wayne	R. D
Brudi, A. C	New Haven.	R. D
Cary, D. B	Fort Wayne	R. 10
Chambers, J. D.	Fort Wayne	R. D
Coblentz, J. W	Fort Wayne	R. 10
Cutshall, Geo. W	Arcola	R. D
Connelly, W. A	Monroeville	R. D
Deppeller, R. R	Fort Wayne	E. —
DILLS, THOMAS J	Fort Wayne	R. D
Dinnen, James M	Fort Wayne	R. D
Engle, A	Monroeville	R. D
Ferguson, W. T	Fort Wayne	R. D
Gard, Brookfield	Fort Wayne	E. D
Green, Francis M	Fort Wayne	H. D
Greenawalt, Geo. L	Fort Wayne	R. D
Gilbert Charles J.	New Haven.	R. D
Gregg, J. S	Fort Wayne	R. D
Greenwell, F	Huntertown	R. D
Gunther, J. W	Harlan	R. 10
Harris, Ella	Fort Wayne	H. D
Harris, L. P	Fort Wayne	H. D
Hetrick Jacob	Fort Wayne	R. D
Houghton, Loyd	Huntertown	R. D
Holloway, M. L	Fort Wayne	H. D
Jones, J. H.	Fort Wayne	N. R. 10
Kesler, R. J	Fort Wayne	R. D
Kryder, John L	Cedarville	R. D
Lipes, R. F	Heller's Corner.	R. D
Laubach, A. J	Fort Wayne	R. D
Leonard, P. M	Fort Wayne	H. —
Lemon, Anna M	Fort Wayne	R. D
McCaskey, G. W	Fort Wayne	R. D
McCausland, J. W	Fort Wayne	R. D
McCormick, T. H.	Fort Wayne	R. —
McCullough, H.	Fort Wayne	R. D
McCullough, T. P	Fort Wayne	R. D
McOscar, E. J	Fort Wayne	R. D
Martz, Christian	Fort Wayne	H. D
Metcalf, S. C	Fort Wayne	R. D
Miller, J. E.	Fort Wayne	R. D
Myers, Isaac N	Maples	R. D
Myers, Hereschel S.	Fort Wayne	R. D
Myers, Wm. H	Fort Wayne	R. D
Murphy George.	Leo	R. D
Nieswonger, H. W	Fort Wayne	R. 3
Nieschang, C. C. F	Fort Wayne	R. D
Null, Lycurgus.	Fort Wayne	E. D
Omo, Joseph H.	Harlan	R. D
Pierce, Jessie B	Fort Wayne	R. D
Porter, Miles F.	Fort Wayne	R. D
Poyneer, G. W	Fort Wayne	R. D
Proegler, Carl	Fort Wayne	R. D
Rauch, A. J	Fort Wayne	R. 3
Rosenthal, I. M	Fort Wayne	R. D
Ross, George A	Fort Wayne	H. D
Reed Ezra L		R. 10

Allen County—Continued.

Name.	*Post Office.*	*School.*	
Rubl, Wm. De La	Sheldon	R.	D
Schilling, Carl	Fort Wayne	R.	D
Siver, E. L	Fort Wayne	R.	D
Smith, C. S	Fort Wayne	R.	D
Smith, Joseph L	Hoagland	E.	D
Stemen, C. B	Fort Wayne	R.	D
Stemen, George C	Fort Wayne	R.	D
Stemen, George B	Fort Wayne	R.	D
Stultz, C. E	Fort Wayne	R.	D
Sturgis, Lewis T	Fort Wayne	R.	D
Stutz, J. A	Fort Wayne	H.	D
Sweringen, H. V	Fort Wayne	R.	D

Name.	*Post Office.*	*School.*	
Shutt, John M	Harlan	N. R.	2
Swift, C. F	Harlan	R.	D
Seaton, John R	Fort Wayne	R.	10
Sledd, Samuel D	Nine Mile	R.	D
Thayer, Frederick	Fort Wayne	R.	D
Van Buskirk, A. E	Fort Wayne	R.	D
Wheelock, K. K	Fort Wayne	R.	D
Whery, Mrs. Mary A	Fort Wayne	R.	D
Whery, Wm. P	Fort Wayne	R.	D
Woodworth, B. S	Fort Wayne	R.	D
Worly, George N	Poe	R.	D
Young, John M.	Fort Wayne	R.	D

Regular, 74; Eclectic, 7; Homeopathic, 9; not reported, 2.

Bartholomew County.

ARWINE, JOHN S	Columbus	R.	10
Allen, W. H	Waymansville	R.	10
Abbett, W. R	Elizabethtown	R.	D
Biddinger, S. W	Waynesburg	E.	10
Banker, A. J	Columbus	R.	D
Beck, W. H	Hartsville	R.	D
Barrett, S. J	Columbus	R.	10
Butler, C. H	Clifford	R.	10
Banks, W. H	Waymansville	R.	10
Butler, W. H	Columbus	R.	D
Carmichael, W. T	Walesboro	P.-M.	D
Cosby, Geo. O	Burnsville	R.	D
Clark, I. S	Columbus	R.	10
Davis, Jos. H	Azalia	R.	10
Dickman, F	Hope	H.	10
Davidson, J. G	Columbus	P.-M.	D
Dean, D. H	Columbus	H.	D
Elrod, M. N	Hartsville	R.	D
Falk, Fred	Columbus	R.	10
Francis, E. T	Columbus	R.	D
Fogle, E. T	Newbern	E.	D
Galloway, C. E	Columbus	R.	D
Hudson, J. B	Columbus	E.	D
Hauzer, Z. H	Columbus	R.	D
Hawley, K. D	Columbus	R.	D
Holder, R. E	South Bethany	R.	D
Howe, O. E	Taylorsville	R.	D
Kincaid, S. F	Taylorsville	E.	D

Kent, C. V	Hope	R.	D
Kennedy, J. Y	St. Louis Cros'g	R.	D
Lawrence, W. M	Jonesville	E.	3
Moore, C. A	Columbus	E.	D
Mennett, O. H	Jonesville	R.	D
McLeod, A. J	Columbus	R.	D
McCoy, Geo. T	Columbus	R.	D
Morris, S. H	Columbus	R.	3
Mulvey, J. W	Jonesville	R.	D
Martin, J. W	Columbus	R.	D
Norton, F. D	Petersville	R.	D
Newton, W. T	Hope	R.	D
Rains, G. W	Jonesville	R.	3
Richards, F. B	Taylorsville	R.	10
Regennas, E. G	Hope	R.	D
Roop, R. H	Columbus	R.	D
Rice, A	Columbus	H.	D
Reynolds, S. H	Columbus	R.	D
Randolph, D. F	Newbern	R.	D
Shane, T. A	Columbus	H.	D
Smith, T. E	Columbus	R.	10
Smalley, J. K	Hartsville	R.	D
Thompson, D. A	Elizabethtown	R.	D
Voris, S. M	Columbus	R.	D
Wisner, W. E	Columbus	R.	D
Wright, J F.	Columbus	R.	D
Weisenbog, J.	Waymansville	R.	10

Regular, 43; Eclectic, 6; Homeopathic, 4; Physio-Medical, 2.

Benton County.

Boice, A. C	Earl Park	R.	3
Borlocher, Finton	Earl Park	R.	D
Baker, Geo. W	Oxford	E.	10
COOK, CLARK	Fowler	R.	D
Christy, J. B	Boswell	R.	10
Cook, M. D	Oxford	E.	10
Fall, Chas. W	Oxford	R.	3
Green, Nellie E	Fowler	R.	3
Green, J. W	Boswell	R.	3
Gray Wm. H	Wadena	E.	D
Gray, Jas. A	Otterbien	R.	D
Hord, A. D	Ambia	R.	D

Hunter, A. F	Raub	E.	D
Kalb, Johnathan	Oxford	R.	10
Mavity, J. S	Fowler	R.	D
Moore, A. V	Ambia	R.	D
McConnell, H. C	Oxford	E.	D
Purdy, A. J	Fowler	R.	D
Roberts, S. R	Fowler	R.	10
Rodman, J. M	Fowler	R.	10
Simpkins, J. C	Boswell	R.	3
Thompson, L. J	Otterbien	R.	D
Wells, A. W	Swanington	R.	D
Whitcomb, J. H	Boswell	R.	3

Regulars, 19; Eclectic, 5.

Blackford County.

Name.	*Post Office.*	*School.*
Alexander, James	Hartford City	H. 10
Bennett, H. H	Montpelier	R. D
Clouser, N. D.	Hartford City	R. 10
Crum, J. W	Roll.	R. D
Cronin, W. N	Hartford City	R. D
DAVISSON, H. C	Hartford City	R. D
Drayer, Petro.	Hartford City	R. D
Downey, H. J.	Hartford City	R. D
Fisher, Martin L	Hartford City	P.-M. D
Harrold, J. R	Roll	R. D
Hardin, Alfred	Hartford City	P.-M. D
Hardin, Mrs. C. A	Hartford City	P.-M. D
Landon, L. C	Priam	R. 10
McFarland, J. E	Millgrove	H. 10
Morrison, J. A	Montpelier	R. D
Mason, C. R	Hartford City	R. D
Sage, J. W	Hartford City	H. D
Sellers, John W	Montpelier	R. D
Scott, M. S	Hartford City	P.-M. D
Ransom, J. A.	Montpelier	R. D
Wheeler, W. H	Hartford City	H. 10
Wilt, W. W	Montpelier	R. D
White, Robt. D	Montpelier	H. 10

Regular, 14; Homœopathic, 5; Physio-Medical, 4.

Boone County.

Austin, F. H	Jamestown	E. D
Ball, Joseph P	Lebanon	E. D
Bounel, Math. H	Lebanon	R. D
Benington, A. M	Max	R. 10
Banta, Samuel J	Jamestown	R. 10
Burke, Geo. L	Jamestown	R. 10
Bounel, Thos. A	New Brunswick	R. 3
Brown. Eli L	Thorntown	E. D
Boyd, John M	Thorntown	R. D
Buttery, Margaret A	Reese's Mills	R. 10
Brandhurst, John.		N. R. 10
Coons, H. N	Lebanon	H. D
Clark, A. J	Zionsvllle	R. D
Carney, John W.		N. R. 10
Crans, T. J		N. R. D
Dunington, Andrew	Thorntown	R. 10
Davis, D. B.	Thorntown	R. 10
Everett, W. E	White Lick	R. D
Ebberts, Joseph A	Reese's Mills. N	R. D
Finch, A. M	Jamestown	R. 3
Heady, W. S	Jamestown	R. D
Hardy, John S	Whitestown	R. D
Hawk, Joseph R	Thorntown	P. M. 10
Hurt, Geo. K	Elizaville.	R. D
Jones, R. E	Lebabon	R. D
Jordan, Thos. W	Whitestown	R. D
Jones, A. B	Lebanon	R. D
Kane, John M	Rosston	R. D
Kellogg, N. P.	Lebanon	E. D
LANE, THOS. H	Lebanon	R. D
Loder, Chas. C	Advance	R. D
Loder, Jennie C	Advance	R. 10
McKee, Joseph A	Big Spring	P. M. D
Miller, A. O	Lebanon	R. D
Orear, John H	Jamestown	R. 10
Porter, A. G	Lebanon	R. D
Porter, John B	Lebanon	R. 3
Prudy, Joseph C	Terhune	R. 3
Reagan, Jesse S	Lebanon	R. 10
Rose, Madison H	Thorntown	R. D
Smith, Carter H	Lebanon	R. D
Scull, D. C	Lebanon	R. 3
Steelsmith, J. M	Terhune	R. D
Silvey, H	Hazelrigg.	R. 10
Shepherdson		N. R. D
Schultz, W. H	Lebanon	R. D
Turner, Thos. S.	Milledge.	P. M. D
Trobridge, Reese	Lebanon	R. D
Umberhine, C. D	Reese's Mills	R. D
Utter Joseph A.	Thorntown	H. D
Ware, W. H	Cason.	R. 10
Whitenack, J N	Zionsville	R. D
White, A. F.	Zionsville	R. D
Walker, D. R.	Reese's Mills	R. D
Worley, O P	Elizaville	P. M. D
Williams, T. A		N. R. D

Regular, 40; Eclectic, 4; Homeopathic, 2; Physio-Medical, 4; not reported, 6.

Brown County.

Browning, Nathan	Needmore.	R. 3
Campbell, Jas. B.	Beanblossom	R. 10
Fleener. Jos. N.	Needmore.	R. 10
Fritch, Joseph	Needmore.	R. 10
Genolin, John F	Nashville	R. D
Griffitt, Arnold S.	Story	R. D
Moser, Jos. P	Spearsville	R. D
Mossop, Stephen	Schooner	R. D
Miller, Montgomery	Beanblossom	R. D
Ralphy, A. J	Nashville.	R. D
ROSS, JOHN C.	Nashville.	R. D
Wilson, Samuel C	Pike's Peak	P. M. 10
Ward, Jos. G	Beanblossom	R.

Regular, 12; Physio-Medical, 1.

Carroll County.

Name.	*Post Office.*	*School.*	
Angell, Charles	Pittsburgh	R.	D
ANGELL, CHAS. E	Delphi	R.	D
Armstrong, F. A	Camden	—	10
Armstrong, E. W.	Camden	R.	D
Chittick, Chas	Burlington	R.	D
Chittick, Andrew	Burlington	R.	D
Cook, A. J	Flora	E.	D
Camp, Chas.	Camden	E.	D
Conway, W. P	Oakley	R.	D
Cromer, James	Flora	E.	D
Cochran, I. F.	Radnor	R.	D
Greer, J. G	Way Back	—	10
Hall, J. D.	Camden	R.	D
Jackson, C. P.	Bringhurst	—	10
Loop, W. M.	Deer Creek	R.	D
Lyons, Frank	Carroll	R.	D
Morrow, J. L	Delphi	R.	D
Plank, W. H	Deer Creek	R.	D
Robinson, F. H.	Delphi	H.	D
Shultz, F. A	Delphi	E.	D
Shultz, J. J	Delphi	E.	D
Schall, C. E.	Camden	R.	D
Smith, Wickliff.	Delphi	R.	D
Stewart, J. W.	Rockfield	R.	D
Snyder, B. F	Camden	R.	D
Walker, Edward	Delphi	E.	D
Wirt, J. H	Flora	—	10
Wright, J. H	Burlington	E.	D
Wilison, R. F	Lockport	R.	D

Regular, 17; Eclectic, 7; Homeopathic, 1.

Cass County.

Name.	*Post Office.*	*School.*	
Allen, J. H	Logansport	H.	D
Baldwin, Thornburg	Galveston	R.	10
Ballard, J. W.	Logansport	R.	D
Banta, Henry J	Logansport	R.	D
Beall, John S.	Galveston	E.	10
Blew, Peter M	Royal Center	R.	D
Bell, Wm. H	Logansport	R.	D
Busjahn, F. A	Logansport	R.	D
Cady, Nelson W	Logansport	R.	D
Chord, A. M	Logansport	E.	D
Clevinger, B. C	Logansport	R.	10
Coleman, A	Logansport	R.	D
Coleman, Warren	Logansport	R.	D
Downey, Jasper A	Logansport	E.	D
Dutchess, Charles P	Walton	R.	D
Eckert, Daniel H.	Nebo	E.	D
Fansler, D. N.	Royal Center	R.	D
Fitch, Graham N	Logansport	R.	D
Fouts, David N.	Royal Center	E.	10
Graves, Arthur E	Galveston	R.	D
Holland, Joseph	Logansport	R.	D
Hattery, Hiram.	Logansport	R.	D
Herrmann, John	Logansport	R.	D
Herrmann, Arthur J	Logansport	R.	D
Jordan, M. A	Logansport	E.	D
Justice, James M.	Logansport	R.	D
Landry, S. F	Logansport	R.	10
LaRose, Noah J	Altoner	E.	D
Lester, Henry C	Logansport	E.	D
Lybrook, Wm. E	Young America	R.	D
Lynas, J. B	Logansport	E.	10
Million, David	Royal Center	E.	D
Morris, James M	Twelve Mile	E.	10
Neff, J. N	Walton	R.	D
Parks, Charles D	Young America	E.	D
Parish, Harrison	Montez	E.	10
Powell, J. T	Logansport	R.	D
Quick, L. L	New Waverly	R.	D
Quick, R H	New Waverly	R.	D
Rolshauser, Eleanor	Logansport	R.	D
Shultz, John B	Logansport	E.	D
Shultz, John H.	Logansport	E.	D
Simmon, Lewis A	Crittenden	R.	3
Smith, J. S	Lincoln	E.	D
Sterret. Jas. E	Logansport	R.	D
Stewart, Barnett	Onward	R.	D
Stevens, Benjamin C	Logansport	R.	D
Talbott, J. H	Logansport	R.	D
Talbott, J. W	Logansport	R.	D
Taylor, Joseph L	Logansport	E.	D
Thomas, O. L	Logansport	R.	D
Wills, John B.	Lincoln	R.	D

Regular, 34; Eclectic, 17; Homœopathic, 1.

Clark County.

Name.	*Post Office.*	*School.*	
Adair, Samuel D	New Wash'ton	R.	D
Allhands, David S	New Wash'ton	E.	3
Beckwith, Lod. W	Jeffersonville	R.	D
Bruner, Jacob	Utica	R.	10
Coombs, David H.	Charlestown	R.	D
Carr, Francis M	Oregon	R.	10
Duerson, Wm. T	Bethlehem	R.	3
Elood, E. L	Henryville	R.	D
Fouts, Wm. K	Jeffersonville	R.	D
Fry, Wm	Jeffersonville	R.	10
Ferguson, H. H.	Henryville	R.	D
Field, Davis L	Jeffersonville	R.	D
Field, B. F	Jeffersonville	R.	D
Haymaker, Geo. W.	Charlestown	R.	D
Hauss, Q. R	Sellersburg	E.	D
Hazzard, Sam'l D	Jeffersonville	R.	D
Hancock, C. F. C	Jeffersonville	R.	D
Hening, Robt.	Jeffersonville	R.	D
Jones, Cal	Charlestown	R.	D
Lampton, G. W.	Jeffersonville	R.	D
Loomis, John.	Jeffersonville	H.	10
McCoy, Wm. N.	Jeffersonville	R.	D
Mclure, David	Jeffersonville	R.	D
McClure, Clarence B	Jeffersonville	R.	D
McClure, Sydney C.	Jeffersonville	R.	D
McGlenn, Wm. P.	Otisco	R.	D
McKinney, M. V	Memphis	R.	D
Nickles, J. M	Sellersburg	R.	D
PEYTON, DAVID C.	Jeffersonville	R.	D
Reynolds, J. M	Memphis	R.	D
Russell, James R.	Nobbs	R.	D
Ruddell, I. N.	Jeffersonville	R.	D
Stolker, B. F	New Providence	R.	D
Sheets, W. H	Jeffersonville	R.	D
Secoy, S. H	Jeffersonville	H.	D
Taggart, S. C	Charlestown	R.	D
Taggart, Jno. F	Owen	R.	D
Veasey, T. Reed	Charlestown	R.	D
Work, W. F.	Charlestown	E.	D
Watkins, E. M	Jeffersonville	R.	D
Williams, L. L	Utica	R.	D
Zerner, Joseph	Jeffersonville	R.	D

Regular, 37; Eclectic, 3; Homœopathic, 2.

Clay County.

Name.	*Post Office.*	*School.*
Allen, H. P	Bowling Green	R. 3
Briley, A	Coffee	R. 10
Bartholomew, N. B.	Poland	R. 3
Brown, W. B	Clay City	R. 10
Byers, L. S	Staunton	R. 3
Burns, D. P.	Clay City	R. D
Black, S. D	Brazil.	R. D
Black, R. C	Center Point	R. D
Culbertson, R. H	Brazil.	R. D
Chamberlin, W. L	Poland	E. 3
Cushman, D. W.	Cloverland	R. D
Carney, J. W	Staunton	R. 3
Elliott, T. A	Poland	R. D
Finley, G. W	Harmony	R. 3
Freed, M. A	Clay City	R. D
Glasgo, T. A	Brazil.	R. 3
Gifford, J. C	Brazil.	R. D
Gantz, R	Saline City	R. 10
Hawkins, W. B	Brazil.	R. 10
Holms, B. F	Asherville	R. D
Hale, L. A	Clay City	E. 10
James, O	Cory	R. D
Moss, J. K	Asherville	R. D
Modisett, J. A	Cory	R. D
McCullough, F. B	Staunton	R. 3
Nall, A. H	Hoosierville	R. 3
Pell, G. M	Carbon	R. D
Price, J. M	Brazil.	R. 10
Rundell, A. E	Center Point	R. D
Smith, J. F.	Brazil.	R. D
Siddens, J. O	Harmony	R. 10
Swineheart, M. H	Asherville	R. 10
Siner, F. M	Harmony	R. D
SPELBRING, F	Saline City	E. 3
Tulley, A. F	Brazil.	R. D
Thornton, F. G	Knightsville	R. 3
Talbott, E. P	Bowling Green	R. D
Wolf, C. H	Clay City	R. D
Williams, John.	Bow'g Green	P.M. 10
Witty, W. B. F	Perth	R. 10
Zook, D. I	Clay City	R. D

Regular, 37; Eclectic, 3.

Clinton County.

Abston, Jesse M	Michigantown	R. D
Andrews, James	Colfax	H. D
Andrus, Given D	Forest	R. D
Brown, George W	Frankfort	R. D
Bogan, E W	Kirklin	R. D
Bowers, Valentine	Michigantown	R. D
Burris, S. O	Geetingsville	R. 3
Coon, Hiram J	Colfax	R. D
Canfield, M. S	Frankfort.	E. D
Cripe, Daniel E.	Frankfort	10
Cooper, Wm. E	Pickard's Mills	P.M. D
Cooper, Wilson T.	Frankfort.	R. D
Chittick, A. J.	Hillisburg	R. D
Cox, Timothy B	Frankfort	R. D
Coble, A. H	Frankfort.	R. D
Crysler, Jos. B	Michigantown	E. 3
Douglass, I. W	Michigantown	R. D
Douglass, Sam'l	Frankfort.	R. 10
Davis, Newton C	Frankfort.	H. D
Deaver, John W	Michigantown	R. D
Earhart, Isaac S	Mulberry	R. D
Edmonds, O. W.	Frankfort.	R. D
Fisher, S. B	Rossville	E. 10
Fisher, J. J	Rossville	R. D
Fall, Wm. D	Kirklin	R. 10
Gard, Oliver	Frankfort	R. D
Hornaday, Wm. H	Forest	R. D
Holmes, Theo. F	Pickard's Mills	10
Holmes, Horatio D	Hillisburg	10
Huntsinger, Eli	Frankfort.	H. D
Jones, F. C	Frankfort.	R. D
Knapp, Sam'l O	Frankfort.	R. D
Koons, M. T.	Mulberry	R. D
Loftin, Jno	Frankfort.	R. D
Lowell, Chas. H	Kirklin	E. D
Lyons, James H	Hillisburg	R. D
Milburn, J. E.	Colfax	R. 10
Morrison, Owen A. J	Middlefork	R. D
Martin, M. L	Forest.	R. 10
Miller, Martin	Forest	H. D
McMurray, James S	Frankfort	R. D
McMURRAY, A. S	Frankfort	R. D
McGuire, W. H	Frankfort	E. D
Palmer, R. F	Frankfort	R. D
Parker, Jos	Colfax	R. D
Powell, T. J	Michigantown	R. D
Randall, W. B	Hillisburg	R. 10
Sims, Stephen B	Frankfort	R. D
Schwinn, Evan E	Kirklin	R. D
Speitel, H. B	Frankfort	E. 10
Sayler, A. J.	Frankfort	E. D
Smith, Wm. G	Scircleville	R. 3
Seawright, J. P	Frankfort	R. D
Strange, Wm	Frankfort	R. 10
Shaw, James E	Rossville	R. D
Sigler, Jno. N.	Geetingsville	R. 3
Tharp, Levi.	Boyleston	R. 3
Wise, James B	Frankfort.	H. D
Wilson, Alex. M	Frankfort.	R. 10
Youkey, W. P.	Rossville	R. D
Yundt, Albert W	Mulberry	R. D
Young, Martin V	Frankfort.	R. D

Regular, 47; Homeopathic, 4; Eclectic, 8; Physio-Medical, 1.

Crawford County.

Bird, Wm. C	English.	R. 10
Bayler, Geo. W.	Milltown	R. D
Bullington, Wm. H	West Fork	R. 10
Brown, Sylvester L.	Eckerty	R. 10
Byrn, Spencer	Marengo	R. D
Babbitt, Jno. H	Eckerty	R. 10
Brown, Geo. W. L	Doolittle's Mill	R. 10
Brown, John F	Mifflin	R. 10
Cole, Wm. A	English	R. D
Gobbel, Frederick R	Grantsburgh	R. 3
Gibbs, Jno. H	Milltown	R. D
Holland, Wm.	Milltown	R. 10
Hammond, Jno. M	English.	R. D
Hazlewood, Jno	Eckerty.	R. D
Hallcraft, Wm. R	Alton.	R. 10
Hawn, Jno. A	Leavenworth.	R. D
Knight, Jno. B	Mt. Prospect	R. 10
King, Newton W	Taswell.	R. 10
Kimes, Daniel W	Leavenworth.	R. 10
Luckett, Chas. D	English	R. D
Merrilees, Wm. M	Leavenworth.	H. 10
McCartney, Jos. C	West Fork	R. D
SETSER, HENRY H	Leavenworth.	R. D
Stewart, Lewis B	Marengo	H. 10
Stewart, Oscar H.	Marengo	H. 10
Trangott, Geo. B	Milltown.	P.-M. D
Walls, Jno. W	Eckerty	R. 3
Weathers, Jno. F	Marengo	R. D
Vandiver, Joel	Mt. Prospect	R. 10

Regular, 25; Homœopathic, 3; Physio-Medical, 1.

Daviess County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Anderson, W. B	Washington	R. D	Millis, E. D.	Plainville	R. 10
Ashcraft, J. C	Montgomery	R. D	McCown, C. C.	Washington	R. D
Bigham, A. W	Montgomery	R. D	McKittrick, O. H	Plainville	R. 10
Bigham, O. A.	Cannelburgh	R. D	McPherson, S. L	Montgomery	R. D
Bonham, A. N	Washington	H. D	Parks, J. F	Cumback	R. D
Brannock, B. B.	Cornetsville	R. D	Peck, S. W	Washington	R. D
Clark, J. W	Glendale	R. D	Ragsdale, M. H.	Elnora	R. 10
Carter, D. R	Epsom	R. 10	Scudder, Chas	Washington	R. D
Culmer, S.	Epsom	R. 10	Scudder, C. P.	Washington	R. D
Dearmire, John	Odon	R. D	Scudder, J. A.	Washington	R. D
Eads, T. L	Washington	R. 3	Smith, D. J	Odon	R. D
Faith, A. H.	Plainville	R. D	Sears, Barton.	Odon	R. 10
Fitzgibbon, John	Washington	R. D	Scanlon, M	Washington	R. D
Gers, Henry	Washington	R. D	Sears, P. M	Elnora	R. D
Harrell, W. A.	Washington	E. 10	Scott, J. E	Elnora	R. D
Harned, F. M.	Washington	R. D	STROUSE, W. H. H	Washington	H. 10
Hedrick, Wm.	Alfordsville	H. D	Tolliver, M. P	Elnora	R. 10
Hobbs, W. P	Raglesville.	R. 10	Willeford, G. W	Washington	R. D
Killion, J. N	Cornetsville	P.M. 10	Wolf, H.	Washington	R. D
Lane, A. R	Odon	R. 10	Walls, W. B	Alfordsville	R. 10
Moore, J. L.	Washington	R. D	Winton, C. F	Washington	R. D

Regular, 37; Homeopathic, 3; Eclectic, 1; Physio-Medical, 1.

Dearborn County.

Bond, R. C	Aurora	R. D	Libbert, E. J	Farmers' Retr't	R. D
Bond, M. L	Aurora	R. D	Lazenby, J. R	Miller Tp	R. 3
Bond, Edwin	Lawrenceburgh	R. 10	Rectanus, F	Aurora	R. D
Barkley, Wm. H	Cold Springs	R. D	Ratcliff, J. T	New Alsac	R. 3
Bowers, A. J	Moore's Hill	R. D	Sale, J. H	Dillsborough	R. D
Craig, T. E	Lawrenceburgh	R. 3	Sale, F. H	Dillsborough	R. D
Cellins, S. H	Lawrenceburgh	R. D	Smith, Edwin	Aurora	R. D
CHAMBERLAIN, S. B.	Lawrenceb'h	R. 10	Sutton, H. H	Aurora	R. D
Coryea, Philip	Moore's Hill	E. D	Swales, W. H., Sr	Logan Tp	R. D
Daughters, A. P	Moore's Hill	R. 10	Schooley, Wm. A	New Alsac	R. D
Feirmier, P	Weisburg	R. D	Spaulding, John	Dillsborough	R. D
Givan, S. E	Manchester	R. D	Swales, W. H., Jr	Logan Tp	R. D
Gatch, J. D	Lawrenceburgh	R. D	Spencer, J. F.	Moore's Hill	E. D
Hayward, M. P	Lawrenceburgh	H. D	Sale, F. H., Jr	Aurora	R. D
Henry. W. C	Aurora	R. D	Thomas, M. L	Harrison	E. D
House, J. W	Kyle	R. D	Thomas, L. R	Harrison	E. D
Heaton, C	Aurora	R. D	Vincent, H. C	Guilford	R. D
Kyle, T. M	Aurora	R. D	Vincent, Wm. T. S	Guilford	R. D
Kyle, J. J	Aurora	R. D	Willette, Wm. N. N	Harrison	R. D
Liddle, J. R	Bright	R. D	Walters, C. G	Lawrenceburgh	R. 10
Lamb, James	Aurora	R. D	Weaver, S. M	Dillsborough	E. D
Lord, T. J	Dillsborough	E. D			

Regular, 36; Eclectic, 6; Homeopathic, 1.

Decatur County.

Alexander, J. H	Clifty	R. D	Jerman, L. W. D	New Point	R. D
Ballard, D. J	St. Paul	R. D	JOHNSON, T	Greensburg.	R. D
Beal, C. M	Clarksburg	R. D	Kirkpatrick, A. M		R. D
Biddinger, S. W	Waynesburg	R. 10	Maguire, S		H. D
Bunker, L. C	Greensburg	E. D	Miller, T. E. F	Westport	H. D
Bracken, Wm	Greensburg.	R. 10	McCoy, W. A	Forest Hill	R. D
Bracken, J. B		R. 10	Parker, J. W	Adams	E. 10
Burroughs, J. P	Westport	R. 10	Reiley, J. H	Sardinia	R. D
Butler, W. G	Clifty	H. D	Reiley, Wm. F		R. D
Cain, C	Clarksburg	R. 10	Remy, A. S	Greensburg.	R. D
Clark, Geo. E	Waynesburg	R. D	Riley, S. H		E. D
Clark, T. J	Lett's Corner.	E. D	Schofield, J. V		R. D
Covert, C. A	Greensburg.	R. D	Scoby, D. L		R. D
Crawford, Geo. S	Clifty	R. D	Smith, J. L	Clarksburg	R. D
Daily, F. M	Millhousen	R. 10	Swem, E. B	Greensburg.	R. 10
DePew, R. J	St. Paul	R. D	Thomas, R. M		R. D
Falconbury, M. G	Greensburg.	E. 10	Thomson, O. K		R. D
Goff, W	Adams	E. 10	Vest, M. C	Forest Hill	R. 3
Gullifer, T. B	Greensburg.	H. D	White, B. S	Sardinia	R. D
Hanse, Wm.	Westport	E. D	Williams, M. H	Lett's Corner.	R. D
Hitt, J. Y	Greensburg.	R. D	Woods, J. M	Gaynorville	R. D
Hitt, S. B		R. D	Wray, H. B	Burney	E. D
Howard, F. M	St. Paul	R. D	Wright, S. V	Greensburg.	R. D

Regular, 34; Homœopathic, 4; Eclectic, 8.

Dekalb County.

Name.	*Post Office.*	*School.*
Allen, Wm. S.	Auburn.	R. 10
Adams, Jacob B	Spencerville	R. D
Bowen.	Corunna	R. D
Broughton Frank	Waterloo	R. D
Bowman, H. W.	St. Joe	R. D
Brown, David N. E.	Hamilton.	10
Brunson, V. C	Newville	R. D
Bevier, Wm.	Waterloo	E. D
Barnett, J. S	Butler	R. D
Bennett, J. B.	Butler	E. D
Bolan, Milton J	Butler	R. 10
Carpender, W. P	Butler	R. D
Chamberlain, Jas. W.	Waterloo	R. D
Casebear, J. B	Auburn.	R. D
Carpenter, I J	Waterloo	R. D
Clevenger, Jas. A.	Garrett	R. D
Darby, A. Byron	Waterloo	R. D
Emanuel, G. E	Spencerville	R. D
Emanuel, Jonas	Spencerville	R. D
Fanning, Fred W.	Butler	R. D
Farrington, A. S	Waterloo	E. 10
Ford, J. H	Auburn	R. 10
Grenwald, Marquis	Auburn Junct	R. 10
Hull, Henry H	Newville	E. 10
Hull, Jacob	Spencerville	E. D
Hughs, Jas. W	Waterloo	R. 10
Kimmel, H. A	Corunna	R. D
Leasure, Lida P	Auburn.	R. D
Lehman, Henry	Waterloo	R. 10
Lilley, Harrison	Butler	H. D
Mercer, Wm. M.	Corunna	R. D
Miller, Jonathan	Butler	R. 10
Matheny, Timothy G	Auburn.	R. D
Musbaum, Wm. H	Auburn.	R. D
Rudolph. O. F	Fairfield Cent'r	R. D
Raub, E. B	Auburn	R. 3
Skilling, John	Garrett	R. D
Shiry, John F.	Hicksville, O	R. 3
Sargent, Tho. C.	Garrett	R. D
Stewart, T. H	Garrett	E. D
SHEFFER, B. S	St. Joe	R. D
Snyder, Fairfield	Corunna	R. D
Sebring, D. A.	Auburn.	R. 10
Swartz, David	Auburn.	R. D
Swartz, Vesta M	Auburn.	R. D
Thompson, Jno. F	Garrett	R. D
Waller, Wm. H.	Waterloo	R. D
Watson, B. G	Auburn.	R. D
Wood, Fred B.	Garrett	R. D

Regular, 42; Eclectic, 6; Homeopathic, 1.

Delaware County.

Name.	*Post Office.*	*School.*
Ames, George F	Eaton.	R. D
Armitage, David R.	Muncie	R. D
Bowles, Thomas J	Muncie	R. D
BRADBURY, A. B.	Muncie	R. D
Boyden, Wilber J	Muncie	R. D
Bunch, Robert A	Muncie	E. D
Baird, John V	Albany	E. 3
Bell, John N	New Burlingt'n.	R. D
Cottrell, David W	Muncie	R. 10
Comstock, J. S. D	Cowan	R. 10
Cornelius, Wm. W	Daleville	E. 10
Downing, Jno. R	Yorktown.	R. D
Driscoll, Wm. E	Muncie	R. D
Dill, Nathaniel C.	DeSoto	R. D
Eastus, Wm. T	Summitsville.	R. D
Flowers, B. Mrs.	Royerton	P. M. D
Good, Alonzo H	Selma.	R. 10
Green, George R	Muncie	R. D
Hayden, John H	Stout	P. M. D
Hastings, Seth G	Muncie	H. D
Hastings, A. H	Muncie	H. D
Harris, Jesse M.	Muncie	R. 10
James, Milton	Muncie	R. D
Julian, James F	New Corner.	E. D
Jackson, Frank G	Muncie	R. 3
Jones, Auburn C	Muncie	H. D
Kemper, G. W. H.	Muncie	R. D
Leech, Garret D	Muncie	R. D
Lefavor, Joseph L	Albany	R. 3
Martin, John S	Muncie	H. D
Mitchell, Harvey	Muncie	R. 10
Murray, Albert L	Eaton.	R. 10
Murray, Albert P.	Albany	R. D
Marshall, Ruben	Cowan	R. D
Munsey, David O	New Corner.	R. D
McCrellis, Charles C	Muncie.	R. 3
Miller, Elizabeth Mrs	Muncie.	H. D
Phinney, Arthur J	Muncie	H. D
Pucket Elijah J.	Muncie.	R. D
Payton, Lewis	Muncie	P. M. D
Recks, Martin W	Muncie	P. M. D
Ross, John C	Muncie.	E. 3
Reasoner, Osmer I	Shideler	R. D
Rogers, William R	Shideler	R. 10
Reid, S. M	Muncie.	R. D
Shields, Edgar A	Muncie.	R. D
Spurgeon, Wm. A	Muncie	P. M. D
Shaub, Daniel	Muncie	N. R. 10
Snell, Solomon	Muncie	E. 10
Smith, Charles W.	Selma.	R. D
Smith, Morrel T	Muncie.	R. D
Smith, A. K.	Muncie.	H. D
Shively, David M.	Yorktown	P. M. D
Shidler, Joseph K	Muncie	E. 10
Summers, Henry C	Daleville	R. 10
Schriver, Elizabeth.	Muncie	N. R. 10
Stick, Jesse	Albany	E. 10
Stackhouse, Urbun	Muncie	R. D
Truet, Isaac N	Muncie	R. D
Whitney, Wm. D	Muncie	R. D
Whitney, Emmie Mrs.	Muncie	H. D

Regular, 37; Eclectic, 8; Homeopathic, 6; Physio-Medical, 6; not reported, 2.

Dubois County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Bigham, O. A	Jasper	R. D	Kempf, Mathew	Ferdinand	R. D
Beeler, Elmer E	Huntingburg	E. D	Line, William	Hillham	10
Clifford, Joseph	Holland	E. D	Liekenmeyer, E. G	Huntingburg	R. D
Coble, Frederick	Birdseye	R. D	Montgomery, Geo. B	Huntingburg	R. D
Cole, John A	Haysville	R. D	McMahon, Wm. R	Huntingburg	R. D
DeBruler, O. E	Ireland	R. D	Paw, George L	Ireland	R. D
Gilbert, Abe	Birdseye	10	Rust, John F	Holland	10
Gleason, E. E	Ireland	10	Rust, Frederick	Holland	R. D
Haig, M. A	Huntingburg	R. D	Stork, Henry W	Holland	R. D
Hunter, Walter	Portersville	R. D	SALB, JOHN P	Jasper	R. D
Harmoni, W. H	Schnellville	10	Schreafer, John	St. Anthony	3
Johnson, L. B. W		R. D	Stephson, Edward	Jasper	10
Johnson, John R	Celestine	E. D	Williams, G. P	Huntingburg	10
Knapp, Victor	Ferdinand	R. D	Westz, Toliver	Jasper	R. D
Kempf, James E	Jasper	R. D	Walker, Geo. W	Ellsworth	10

Regular, 18; Eclectic, 3.

Elkhart County.

Aitkins, F. M.	Bristol	R. D	Jennings, J. W	Millersburg	R. D
Ash, Elmer E	Goshen	R. D	Johnson, W. W	Goshen	R. D
Ash, W. N	Middlebury	R. D	Kauffman, Mrs A. G	Goshen	E. 10
Baker, D. W	Benton	R. 10	Keene, Dan'l P.	Goshen	R. D
Balcom, F. Dela Claire	Elkhart	P.-M. D	Knepple, W. H	Wakarusa	R. 3
Barbour, J. E.	Bristol	H. D	Krider, M. K	Goshen	H. D
Barney, Lee M	Elkhart	R. D	Krider, W. B	Goshen	H. D
Baumgartner, C. C	Elkhart	N. R. 10	Kyler, W. B	Benton	R. 10
Beaty, Marshall	Elkhart	R. D	Latta, M. M	Goshen	R. D
Beyerle, H. J	Goshen	R. D	Lambert, C. A	Goshen	R. D
Bowman, W. E	Elkhart	R. D	Larimer, Bartlett.	Millersburg	R. D
Bowser, J. M	Nappanee	R. D	Lichty, S. E	Wakarusa	R. D
Brumbaugh, Melvin	Gravelton	P.-M. D	Lockwood, R. L	Wakarusa	H. D
Cassell, Elizabeth	Elkhart	R. D	Martin, S. E	Elkhart	E. 10
Clark, Stephen T.	Elkhart	R. D	Mathews, James	New Paris	R. D
Congdon, W. R	Bristol	R. D	Miles, F. L	Elkhart	R. D
Day, Luella	Goshen	R. D	Miller, D. L	Goshen	R. D
Defreese, H. J	Wakarusa	R. D	Montgomery, Thos	Elkhart	R. 10
Dreese, C. L	Goshen	R. D	Myers, J. W	Middlebury	E. D
Duff, V. E.	Middlebury.	R. D	Neal, W. A	Elkhart	R. 3
Eckleman, F. C	Elkhart	R. D	Niman, C. H	Elkhart	R. D
Eisenbeiss, Sam'l	New Paris	R. 10	Peck, M. Eva	Goshen	R. 3
Fisher, A. L	Elkhart	H. D	Pixley, C. S	Elkhart.	R. D
Frink, C. S.	Elkhart	R. D	Putt, F. L.	Middlebury	R. D
Greiner, G. G.	Vistula	R. 3	Rohrig, P. J	Goshen	R. D
Haggerty, R. Q	Elkhart	R. D	Sensenich, Aaron.	Wakarusa	R. D
Hani, W. F	Middlebury	R. D	Short, I. W	Elkhart	R. D
Harding, P. D	Goshen	R. D	Sparklin, C. C	Goshen	R. 10
Harrington, O. B	Elkhart	R. D	Spohn, G. W	Elkhart	R. D
HEATWOLE, J. H	Goshen	R. D	Stauffer, H. R	Nappanee	R. D
Hendryx, T. C	Elkhart	R. D	Sweetland, Frank	Elkhart	R. D
Herring, Fred.	Goshen	E. 10	Thomas, W. H	Elkhart	H. D
Horton, Mrs. Alice	Elkhart	E. D	Turner, Porter	Elkhart	H. D
Huntsinger, Chau'cey	Nappanee	H. D	Whippy, W. A	Goshen	H. 3
Inks, John S	Nappanee	R. D	Whitner, B. F	Goshen	R. D
Irwin, A. J	Goshen	R. D	Work, J. A	Elkhart.	R. D
Jackson, A. C	Goshen	R. 10	Woodcox, N. C	Millersburg	E. D

Regular, 46; Homœopathic, 6; Physio-Medical, 2; not reported, 1.

Fayette County.

Butler, D. W	Connersville	R. 10	Phanes, O. P	Alquina	R. D
Chitwood, G. R	Connersville	R. D	Pepper, Wm. I	Connersville	R. D
Chitwood, Joshua	Connersville	R. D	Shepard, S. D	Everton	R. 10
Chitwood, John E	Connersville	R. D	Smalley, J. G	Connersville	R. D
Chitwood, F. A	Connersville	R. 10	Tingley, W. B	Harrisburg	R. D
Denbyshire, Ephraim	Bentonville	R. D	Turner, John	Null's Mills	E. 10
Dillman, L. D	Connersville	R. D	Tyrrell, A. D	Connersville	E. 10
Ford, T. J	Connersville	R. D	Vance, S. W	Connersville	R. D
GREGG, V. H	Connersville	R. 10	Wall, John	Connersville	R. 10
Hamilton, S. N	Connersville	R. D	Webster, Chas	Connersville	H D
Laramore, J. D	Connersville	R. D	Wyman, Chas	Connersville	R. D

Regular, 19; Eclectic, 2; Homeopathic, 1.

Floyd County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Alexander, S. J	New Albany	R. D	Harris, W. H	New Albany	R. D
Bowman, Chas	New Albany	R. D	Jones, Jas. H	New Albany	R. D
Beust, Max	New Albany	R. D	Lemon, John H	New Albany	R. 10
Beust, Bernard	New Albany	R. 10	Lung, H. B	New Albany	R. D
Burney, W. A	New Albany	R. D	McIntyre, C. W., Sr	New Albany	R. D
Brigham, Chas. N	New Albany	H. D	McINTYRE, C. W., Jr	New Albany	R. D
Buley, D. M	Georgetown	R. D	Neat, Thos. C	New Albany	R. 10
Clapp, W. A	New Albany	R. D	Needham, H. J	New Albany	H. D
Cannon, Geo. H	New Albany	R. D	Payne, John N	New Albany	R. D
Cook, Chas. P	New Albany	R. D	Rutherford, R. S	Galena	R. D
Davis, James M	Greenville	R. D	Sloan, John	New Albany	R. D
Davis, Chas. P	Galena	R. D	Stewart, John L	New Albany	R. D
Erni, G. O	New Albany	H. D	Starr, Wm. L	New Albany	R. D
Easley, E. P	New Albany	R. D	Sigmon, Edwin L	New Albany	R. D
Greshem, G. W	New Albany	R. D	Taggart, W. J	Georgetown	R. D
Garey, D	New Albany	R. D	Wilcox, S. C	New Albany	R. D
Hause, A. P	New Albany	E. D	Wolfe, H. S	New Albany	R. D

Regular, 30; Homeopathic, 3; Eclectic, 1.

Fountain County.

Armstrong, Lewis P	Newtown	R. D	Moore, Patrick B.	Kingman	R. 10
Austin, Chas. B.	Veedersburg	R. D	Mendenhall, E. W	Harveysburg	R. 10
Aydelotte, Thos. B	Newtown	R. D	Orrahood, Job D	Coal Creek	R. D
Anderson, Sarah E	Veedersburg	N. R. 10	Parker, John	Melott	R. 3
Burlington, J. C	Attica	E. D	Petitt, Marshall	Veedersburg	R D
Cole, Wm. C	Attica	R. D	Rowland, George	Covington	R. D
Coggins, Chas. M	Coal Creek	R. D	Riffle, John S	Veedersburg	R D
Case, Marvin F	Attica	R. D	Richardson, A. G	Veedersburg	R. D
Downing, Sam'l	Riverside	R. D	Rice, John T	Attica	R. D
Dowden, J. W.	Yeddo	E. 10	Rupert, Archie M.	Attica	R. D
Fine, Ephraim M.	Steam Corner	R. D	Stout, Wm. R.	Hillsboro	R. D
Finney, Chas. J.	Attica	R. D	Shotts, Henry	Wallace	R. D
Hays, Geo. C	Hillsboro	R. D	Sparks, Joseph T	Yeddo	R. 10
Henderson, J. T	Covington	R. D	Shoaf, Francis A	Yeddo	R. D
JONES, GEORGE S	Covington	R. D	Spining, John N	Covington	R. 10
Livengood, Jasper A	Wallace	R. D	Whitehall, Alex. N.	Attica	E. D
Mock, John W	Covington	R. D	Whitehall, Samuel	Attica	E. D
McNeill, Scott	Stone Bluff	R. 3	Young, Benj. F.	Veedersburg	R. D

Regular, 31; Eclectic, 4; not reported, 1.

Franklin County.

Averdick, H. G	Oldenburgh	R. D	Mann, E. B	Oldenburgh	R. D
Anness, W. R	Bath	R. 3	Morgan, J. O	Springfield	R. D
Berry Geo., Sr	Brookville	R. 10	McGuire, N. M	Metamora	R. 10
Berry, Wm	Brookville	R. D	McElwee, Harry	Bath	R. D
Burtonshaw, T. J	Drewersburgh	R. 10	Owens, R. J	Cedar Grove	R. D
BUCKINGHAM, G. B	Brookville	R. D	Patterson, E. L	Fairfield	R. D
Best, N. L	Mt. Carmel	E. D	Quick, J. H	Brookville	R. 10
Cupp, M. F	Metamora	R. D	Squires, Geo. E	Brookville	E. D
Conner, I. H	Metamora	R. 10	Shum, Chas	St Peters	R. 10
Davis, W. H	Mt. Carmel	R. 10	Simmons, E	Blooming Grove	R. 10
Gifford, S. A	Laurel	R. D	Starr, P. J.	Blooming Grove	R. 10
Gregory, Henry, Jr	Laurel	R. 10	Stoddard, S. P	Brookville	E. D
Linegar, D. B	Whitcomb	E. 3	Timmelmann, Ernst	Huntersville	N. R
Lindner, H	Brookville	E. D	Westfall, ——	Laurel	N. R

Regular, 21; Eclectic, 5; not reported, 2.

Fulton County.

Name.	*Post Office.*	*School.*		*Name.*	*Post Office.*	*School.*	
Bailey, A. L	Akron	E.	10	Johnston, A	Akron	R.	3
Brown, Angus	Rochester.	H.	3	Loring, C. J.	Rochester.	R.	D
Calvin, G. M	Kewanna.	E.	3	Metzler, J. B	Rochester.	N. R.	10
Campbell, C. W.	Blue Grass	R.	3	Morris, J. M	Fulton	R.	10
Caple, A. Z	Akron	R.	D	Overmeyer, B. F	Leiter's Ford.	R.	3
Cleland, W. T	Kewanna.	R.	10	Peffley, W. F	Fulton	R.	3
Clymen, U. J	Bloomingsburg.	E.	D	RANNELLS, J. N	Rochester.	E.	D
Dawson, B. F.	Kewanna	R.	D	Rhodes, E. E	Rochester.	R.	3
Doke, J. T	Tiosa	R.	3	Robbins, A. H	Rochester.	R.	D
Fish, S. R.	Bloomingsburg.	E.	10	Richard, John	Fulton		3
Gould, Vernon	Rochester.	R.	D	Rogers, L	Kewanna.	E.	D
Gould, C. E.	Rochester.	R.	D	Scott, W. D	Rochester.	H.	D
Harter, C. F	Akron	R.	D	Shafer, W. S	Rochester.	E.	D
Hector, C	Rochester.	E.	D	Shields, A. M.	Rochester.	R.	D
Hill, Wm	Rochester.	E.	D	Thompson, A. R	Kewanna.	N. R.	10
Howell, J. O	Kewanna	E.	10	Terry, C. E	Akron	R.	D

Regular, 17; Eclectic, 10; Homœopathic, 2; not reported, 2.

Gibson County.

Burton, A. R	Princeton	R.	D	Montgomery, T. J	Owensville	R.	D
Burton, H	Somerville	R.	10	Marchaud, V	Haubstadt	R.	D
Ballard, J	Haubstadt	R.	D	Munford, S. E	Princeton	R.	D
Blair, W. W	Princeton	R.	D	Malone, J. A	Princeton	R.	10
Blair, F.	Princeton	R.	D	Moore, R	Somerville	R.	D
Brown, T. M	Oakland City.	R.	D	McGowan, J. W	Oakland City.	R.	D
Benson, R. A	Buckskin.	R.	D	McGowan, W. J	Oakland City.	R.	10
Curtner, P. H.	Hazleton	R.	D	Nelson, F.	Hazleton	E.	3
Clark, J. J	Owensville	R.	3	Ottmann, P	Haubstadt	R.	D
Duncan, W. B	Patoka	E.	3	Patten, J. C.	Francisco	R.	D
Davis, O. F	Patoka	R.	D	Powell, D. G	Princeton	R.	D
Fisher, G. C	Patoka	R.	D	Runcie, J. W	Fort Branch	R.	D
French, W. W	Fort Branch	R.	D	Runcie, G. U	Fort Branch	R.	D
Gudgel, J. T	Hazleton	R.	D	Reavis, D. P	Francisco	R.	3
Genung, W. R	Fort Branch	R.	D	Richie, L B	Buckskin.	R.	3
Hudson, O. L	Princeton	H.	3	Strickland, Geo	Francisco.	R.	D
Hopkins, W. G	Fort Branch	R.	D	Stott, J	Princeton	R.	D
Hopkins, J. N	Fort Branch	R.	D	Shoemaker, D. M.	Owensville	E.	10
Ireland, J. M	Francisco.	R.	D	Shelton, J. W.	Somerville	E.	10
Kidd, W. G	Princeton.	R.	D	SHOPTAUGH, S. H	Princeton	R.	D
Kendle, G. C	Princeton.	R.	D	Stewart, W. H. H	Oakland City.	R.	10
Leister, W. L	Princeton.	E.	3	Stuart, A. L	Somerville	R.	D
Littlepage, G	Haubstadt	R.	D	Williams, J. M	Owensville	F.	D
Mason, G. C	Oakland City.	R.	D	Woodruff, A. C	Oakland City.	R.	D
Maxam, F. H	Princeton	R.	D	Williamson, W. T	Fort Branch	E.	D

Regular, 42; Eclectic, 7; Homœopathic, 1.

Grant County.

Adkins, J. C	Marion	R.	3	Henley, Alph	Fairmount	R.	D
Ayers, S. D	Marion	R.	D	Hanmore, J. J	Landesville	R.	D
Barnes, R. A	Marion	P.-M.	D	Haines, N. P	Herbst	R.	D
Barnes, Eleanor	Marion	P.-M.	D	Hubbard, W. C	Marion	R.	D
Barnes, Wm. C	Mier	R.	D	Hamilton, A. A	Marion	R.	D
Bailey, H. R	Sweetsers	E.	D	Horne, S. S	Jonesboro	R.	D
Conover, J. V	Marion	E.	D	Hough, W. A	Marion	P.-M.	D
Coldren, W. R	Marion	P.-M.	D	Jones, E. P	Marion	E.	D
Corey, Lavamer	Van Buren	R.	D	Knight, J, C	Jonesboro	R.	D
Corey, Lewis J	Van Buren	R.	D	Kimball, T. C	Marion	R.	D
Corey, C. W	Van Buren	R.	D	Kimball, A. D	Marion	R.	D
Carey, Isaac	Marion	P.-M.	D	Kersey, I. B	Marion	P.-M.	D
Daniels, G. W	Point Isabelle	R.	D	Lomax, Wm	Marion	R.	D
Davis, S. H'.	Sweetsers	E.	D	Lanshee, I. F	Swayzee	R.	D
Echert, C. H	Marion	R.	D	Lenox, Frank	Swayzee	R.	10
Eberle, Peter	Marion	P.-M.	3	Langston, Edgar	Point Isabelle	R.	10
Flynn, Will	Marion	R.	D	Lord, J. L	Marion	R.	D
Forrest, J. H	Marion	E.	D	Lettle, I. B	Marion	R.	D
Fite, C. H	Jalapa	P.-M.	3	Landess, G. A	Van Buren	R.	D
Hollis, Samuel	Upland	R.	D	Ludlenn, B. F	Marion	R.	D

Grant County—Continued.

Name.	Post Office.	School.	
Mock, J. F	Marion	E.	3
Munsey, Mrs. J. F	Marion	P.-M.	D
Moon, Allen	Fairmount	P.-M.	3
Meek, J. H	Jonesboro	R.	10
McKiney, G. H	Jonesboro	R.	D
Moore, C. V	Fairmount	R.	D
Moore, S. W	Marion	E.	D
McKinzey, Wm. M	Marion	P.-M.	10
Ross, Justin	Marion	R.	D
Shively, J. S	Marion	R.	10
Shively, M. T	Marion	R.	D
Snodgrass, D. B	Marion	P.-M.	D
Stout, O. G	Upland	R.	D
Stevens, A. B	Marion	P.-M.	D
Seal, I. N	Hackleman	R.	D
Snodgrass, Mrs. Mary	Marion	P.-M.	D
Thomas, W. B	Fairmount	R.	D
Vatan, Mrs. R. A	Marion	P.-M.	D
Williamson, P. E	Sweetsers	R.	D
Williams, Lewis	Marion	R.	D
Whitson, E. M	Jonesboro	R.	10
WALL, M. M	Marion	H.	D
Webster, E. C	Marion	E.	D

Regular, 39; Physio-Medical, 15; Eclectic, 8; Homeopathic, 1.

Greene County.

Aydolotte, Thomas	Wright	R.	3
Arnold. J. G	Lyons	R.	10
Ashbury, W. H. H	Jasonville	R.	D
Acton, W. G	Worthington	E.	10
Bridwell, L	Owensburg	R.	10
Burk, W. H.	Scotland	R.	D
Burgl, N. C	Park	R.	10
Cravens, S. C	Bloomfield	R.	D
Cravens, E. R.	Marco	R.	D
Cook, Peter M	Solsbury	R.	D
Demont, C. R.	Newbury	R.	D
Dilley, L. H	Linton	E.	3
EDWARDS, C. H.	Lyons	R.	D
Gray, Simeon	Worthington	R.	10
Gray, G. B	Worthington	R.	10
Gustineau, H.	Worthington	R.	10
Harroh, John M	Switz City	R.	D
Hanna, J. W	Scotland	R.	D
Hilburn, E. R.	Newbury	R.	D
Herold, Henry	Owensburg	E.	10
Jackson, E. J.	Linton	R.	10
Lanhorn, R.	Worthington		10
Lowder, H. R	Bloomfield	R.	D
Marshall, A. F	Jasonville	R.	3
Mullane, Joseph	Lyons	R.	D
McCabe, H. H.	Worthington	E.	D
Minich, J. A	Worthington	R.	D
Munson, G. W	Stanford	R.	D
McIntosh, J. P	Newark	E.	10
Newman, W. R.	Switz City	P. M.	10
O'Neal, W. A.	Newbury	R.	10
Rose, B. A	Linton	R.	10
Rankin, T. B	Bloomfield	R.	10
Selfridge, W. R.	Worthington	E.	D
Sherwood, E. T.	Linton	R.	D
Sherwood, B. M	Linton	R.	D
Squire, Wm. B	Worthington	E.	D
Simms, J. A	Newbury	E.	D
Talbott, J. E	Marco	R.	D
Wheeler, Thomas	Newark	E.	D
Williams, N. W.	Owensburg	R.	10
Yemen, C. H	Owensburg	R.	D

Regular, 31; Eclectic, 9; Physio-Medical, 1; not reported, 1.

Hamilton County.

Aldred, John A	Hortonville	R.	D
Booth, A. D.	Noblesville	R.	D
Benson, J. L	Noblesville	R.	D
Byers, J. S	Noblesville	P.-M.	D
Baker, J. J	Westfield	P.-M.	D
Cook, C. W	Carmel	P.-M.	D
Coffin, B. F	Westfield	P.-M.	10
Cropper, E. A	Sheridan	R.	D
Davenport, I. W	Sheridan	R.	D
Dove, S. C	Westfield	R.	D
Driver, J. C.	Atlanta	R.	D
Davenport, H. C	Sheridan	R.	D
Fancher, J. W	Sheridan	R.	D
Fodrea, Zeri H	Westfield	R.	D
Graham, W. B	Noblesville	R.	D
Griffin, R. J	Deming	R.	3
Haworth, M. C	Noblesville	R.	D
Hobson, J. F	Noblesville	E.	D
Herr, H. L	Westfield	R.	D
Heath, J. P	Fisher's Switch	R.	D
Hershey, K. C	Carmel	R.	D
Harold, I. S.	Westfield	P.-M.	D
Kitchel, J. S	Noblesville	H.	10
Loehr, E. C	Noblesville	R.	D
LYLE, A. W. T.	Fisher's Switch	R.	D
Lamb, Enoch	Olio	R.	D
Murphy, Jas. M	Arcadia	R.	D
Musse, Adam	Noblesville	R.	D
Melliken, H. W	Sheridan	P.-M.	D
McMurtry, ——	Boxleytown	R.	D
McShane, J. T	Carmel	R.	D
McFetridge, L. C	Atlanta	R.	D
McNutt, W. Young		R.	D
Mendenhall, Chas. W	Carmel	R.	D
Newby, J. C	Boxleytown	R.	D
Pettyjohn, J. B	Westfield	R.	10
Pettyjohn, O. B.	Deming	R.	D
Parr, J. U.	Jolietville	R.	D
Roads, Anna	Atlanta	—	10
Smith, H. R.	Olio	R.	D
Smith, T. J	Strawtown	R.	D
Starteman, Lewis	Arcadia	—	10
Stout, H. H	Cicero	R.	D
Shelburn, Wm. T	Jolietville	R.	D
Tucker, A. R	Cicero	R.	D
White, T. A.	Noblesville	R.	D
Whitsell, P. P	Clarksville	R.	10
Warford, F. M	Cicero	R.	D
Wilson, Wm. L	Clarksville	E.	D

Regular, 38; Physio-Medical, 6; Eclectic, 1.

Hancock County.

Name.	*Post Office.*	*School.*	
Adams, M. M	Greenfield	R.	D
Andrews, J. O	Westland	R.	10
BOOTS, S. S	Greenfield	E.	D
Bruner, C. K	Greenfield	R.	D
Bruner, Mary L	Greenfield	R.	D
Brichel, Jacob	New Palestine	—	10
Bell, J. S	Philadelphia	—	10
Cory, J. S	McCordsville	R.	3
Cox, W. B.	Charlottsville	E.	10
Cook, B. M	Wilkerson	R.	D
Collins, O. A	Mohawk	R.	D
Comstock, Jas. A	Greenfield	R.	D
Daily, G. W.	Charlottsville	E.	D
Ely, J. M	New Palestine	R.	D
Ely, L. C	New Palestine	R.	D
Howard, N. P.	Greenfield	R.	D
Howard, N. P., Jr.	Greenfield	R.	D
Hanna, R. D	Warrington	R.	D
Hammer, N. L	Wilkerson	P-M.	D
Hervey, F. F	Fortville	R.	D
Hervey, T. P	McCordsville	R.	10
Judkins, E. I	Greenfield	R.	D
Julian, J. P	Wilkerson	P-M.	D
Justice, W. A.	Eden	R.	D
Justice, Jno. M.	Maxwell	R.	D
King, W. R	Greenville	R.	10
Kirkhoff, C. H	New Palestine	R.	D
Larimore, J. M	Carrollton	R.	D
Martin, S. M	Greenfield	R.	D
Mitchell, W. P	Charlottsville	R.	D
Price, J	Greenfield	—	10
Ryan, W. B	Willow Branch	R.	3
Stuart, A. A	Fortville	R.	3
Stuart, J. G	Fortville	R.	D
Saunder, T. K	Fortville	R.	10
Selman, J. W	Greenfield	R.	D
Trees, Wm	Warrington	R.	10
Troy, S. A	Milner's Cor	R.	D
Wright, J. E	Charlottsville	E.	D

Regular, 30; Eclectic, 4; Physio-Medical, 2; not reported, 3.

Harrison County.

Anderson, John W	Moberly	R.	D
Bennett, Jas. H.	New Amsterd'm	R.	D
Boston, Chas. H	Bradford	P.-M.	D
Bitler, B. E.	New Salisbury	R.	D
Clarke, Jacob.	Corydon	R.	D
Deen, H. K	Central	R.	D
Denbo, Wm. R	Mauckport	R.	10
Davis, Wm. H	New Middlet'n	R.	D
Daniel, Wm.	Corydon	R.	D
Ellis, Joseph	Bradford	R.	D
Funkhouser, Wm. H	Valley City	R.	D
Funk, Z. T	Corydon	R.	D
Finley, John F	Palmyra	R.	10
Farbis, B. F.	Laconia	R.	D
Fouts, David C	Salisbury	R.	10
Fouts, Henry C.	Lanesville	R.	D
Harner, Jacob L	Lanesville	R.	10
Hopper, I. J	De Pauw	P.-M.	D
Hurst, Stephen H	Laconia	R.	D
Jones, A. M.	Corydon	R.	D
Kandie, Wm. A	Laconia	R.	10
Lawson, Jno. E.	Corydon	R.	D
Lafallette, Wm. P	Matts Station	R.	D
Mitchem, Littleton.	Crisp Cross R'ds	R.	10
Martin, G. F	Corydon	R.	D
Moore, Wm.	Rosewood	R.	D
Neely, I. L	Corydon	R.	D
Patterson, R. W	Elizabeth	R.	10
Reade, Wm. H	New Amsterd'm	R.	D
Siegler, R. R	Ramsey	R.	D
Smith, A. E. L	Corydon	R.	D
Smith, A. E.	Corydon	R.	D
Wolfe, Samuel C	Elizabeth	R.	D
Wolfe, Z. C	Lanesville	R.	D
Wolfe, L. O. P	Mauckport	R.	D
Winders, L. C	Elizabeth	R.	10
Wolpert, W. I	Elizabeth	R.	D
Weddell, James D	Elizabeth	R.	D

Regular, 36; Physio-Medical, 2.

Hendricks County.

Adams, Thomas J	North Salem	R.	D
Allen, John D	Plainfield	R.	D
Bartholomew, B.	Danville	R.	D
Barker, Joel	Danville	R.	D
Brill, J. H.	Pittsboro	R.	D
Brent, Newton	Pittsboro	R.	D
Brooks, M. W.	Hazlewood	R.	3
Burk, Tighlman P	Lizton	R.	3
Carter, Amos	Plainfield	R.	D
Cloud, C. F. C.	Pittsboro	R.	10
Dryden, Thomas F	Clayton	R.	D
Davidson, Albert W	Brownsburg	R.	D
Evans, Thomas.	Plainfield	R.	D
FARABEE, CLARK	E. Danville	D.	R
French, John S.	Pittsboro	R.	D
Green, J. N.	Stilesville	R.	D
Grimes, William T	Coatsville	R.	3
Graham, Thomas A.	Brownsburg	R.	D
Gilbert, A. K	Clayton	R.	D
Grimes, J. B	North Salem	R.	10
Hunt, Tighlman	Coatsville	R.	D
Hunt, Stephen	Coatsville	R.	D
Huron, Frank H	Danville	H.	D
House, Geo. H. F	Clayton	R.	D
Hoadly, William J	Danville	R.	D
Heavenridge, A.	Stilesville	R.	D
Johnson, Thos. W.	Danville	R.	D
Johnson, Oscar B.	Lizton	R.	D
Jessup, Maria A	Friendswood	R.	D
Kennedy, Leroy H	Danville	R.	D
Lawson, Wilson T	Danville	R.	D
Marsh, John L	Brownsburg	E.	D
Masters, N. G.	Stilesville	R.	D
Morgan, Abram.	Cartersburg	E.	D
Martin, Simon	North Salem	R.	D
McKitrick, Albert	Brownsburg	R.	D
Osborn, John A.	New Winchester	R.	D
O'Dwyer, Mary A. M	Brownsburg	E.	D
Parker, M. G	Danville	R.	D
Procter, James M.	North Salem	R.	D
Robbins, William	North Salem	R.	D
Ragan, John S	Avon	R.	D
Reagan, Jesse.	Plainfield	R.	D
Summers, Harvey C	Amo	R.	D
Strong, John F	Plainfield	R.	D
Strong, Asa M	Belleville	R.	D
Sanders, Louis A	Lizton	R.	D
Todd, Henry G	Danville	R.	D
Towles, Alfred N	Danville	R.	D
White, Charles A.	Danville	R.	D
White, William H	Amo	R.	D

Regular, 47; Eclectic, 3; Homœopathic, 1.

Henry County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Anderson, J. T	Honey Creek	R. 3	Leavens, A. DeWolf	Middletown.	P.-M. D
Bailey, G. D	Spiceland	R. D	McGavran, W. B	Knightstown	R D
Bailey, Rachel S	Spiceland	R. D	McKillup, J. H	Snyder	R. 10
Baldwin, Lawrence	Knightstown	H. D	McSherly, J. L	Sulphur Springs	R. D
Barrett, Omar H	Knightstown	R. D	Mendenhall, E. T	New Castle	R. D
Bartlett, A. C	New Castle	R. D	Newby, Timri	Greensboro	R. 10
Bartlett, C. G	Lewisville	R. D	Norviel, R. D	Mount Summit	E. D
Bartlett W. M	Lewisville	R. 10	Oalden, W. C	Kennard	R. 10
Benedict. H	Springport	R. 3	Painter, Perry	Middletown	N. R
Bond, C. W	Cadiz	R. 10	Pendleton, C. B	Mechanicsb'g	P.-M. D
Boor, W. A	New Castle	R. D	Pickering, S	New Lisbon	R. D
Boor, W. F	New Castle	R. D	Post, B. O	Sulphur Springs	R. D
Burke, G. W	New Castle	R. D	Rawlins, F. J. C	Elizabeth City	R. D
Clapper, D	Mooreland	H. D	Rawlins, John W	Elizabeth City	R. 3
Cochran, James	Spiceland	R. D	Rea, Charles L	Rogersville	R. D
Coffin, Oliver S	Lewisville	E. D	Rea, John	New Castle	R. D
Crouse, H. M	Knightstown	R. D	Rodecap, Geo. W	Middletown	H. D
Eskew, W. C	Kennard	R. D	Rogers, S. G	Mooreland	E. D
Estabrook, L. W	Springport	R. D	Smith, Mary J	Greensboro	P.-M. D
Ferris, E. S	New Lisbon	R. D	Smith, R. A	Greensboro	P.-M. D
FERRIS, S.	New Castle	R. 10	Stafford, Charles	New Castle	P.-M. D
Garrett, O. H	Cadiz	R. D	Stafford, Daniel H	New Castle	P.-M. D
Gibbs, C. N	New Lisbon	R. 10	Stafford, J. A	Millville	P.-M. D
Green, A. W	Knightstown	R. D	Stafford, Horace	Straughn Sta	P.-M. D
Griffis, Robert	Middletown	R. D.	Stanley, J. C	Dunreith	R. D
Gronendyke, O. J	New Castle	R. D	Stone, F. L	Mechanicsb'g	P.-M. D
Gronendyke, T. W	New Castle	R. 3	Thornburgh, Frank L	Middletown	R. D
Guyer, O. K	Lewisville	R. D	Waters, S. C	Middletown	R. D
Hardesty, J. C	Millville	R. D	Wayman, J. C	New Castle	P.-M. D
Hess, F. C	Cadiz	R. D	Weaver, John	Knightstown	R. 10
Hobbs, Wilson	Knightstown	R. D	Weeks, Elizabeth J	Mechanicsb'g	P.-M. D
Hollinger, I. N	Blountsville	R. 3	Weeks, Joseph	Mechanicsb'g	P.-M. D
Holloway, Lizzie E	Spiceland	H. D	Welsh. J. H	Middletown	R. D
Holloway, O. E	Knightstown	R. D	Williams, H. D	New Castle	P.-M. D
Johnson, E. M	Greensboro	R. D	Williams, J. B	Honey Creek	P.-M. D
Kirk, E. E	Spiceland	R D	Winston, L. V	Knightstown	R. D
Kissel, William	New Castle	R. 10	Yockey, D. H	Blountsville	R. 3

Regular, 52: Homeopathic, 4; Physio-Medical, 14; Eclectic, 3; not reported, 1.

Howard County.

Armstrong, E. A	Kokomo	R. D	Miller, H. C.	Ridgeway.	R. D
Bates, Aaron	Kokomo	R. D	Morray, S. T	Greentown	R. 10
Baker, T. C	Kokomo	H. D	Moore, J. B.	Kokomo	R. D
Bagwell, J. H.	Jerome	R. D	McClurg, W. H	Kokomo	R. D
Benst, J. H	Kokomo	R. D	Newlin, S.	New London	E. D
Blount, R. B	W. Middleton	R. D	Oiler, Luther	Kokomo	R. D
Cavalt, A. A	Greentown	R. D	Oiler, L. H	Russiaville	R. 10
Conner, Levi	Jerome	E. 3	Pucket, J. L	Kokomo	R. D
Cooper, Wm	Kokomo	E. D	Payton, W. B.	Greentown	R. D
Cooper, J. A	Kokomo	E. D	Payne, H. T	Russiaville	R. D
Freeman, A. C	Kokomo	R. 10	Rice, E. C.	Oakland	E. D
Garr. J. O.	Kokomo	R. D	Ross, J. H	Kokomo	R. D
Gifford, T. V	Kokomo	10	SMITH, RICH'D H	Kokomo	R. D
Hull, W. H	Center	R. D	Scott, Wm	Kokomo	R. D
Hulbert, D	Kokomo	3	Scott, James	Greentown	R. D
Kern, T.	Kokomo	R. D	Scott, Gedison	Greentown	R. D
Kern, L.	Kokomo	R. D	Sawer, E. W	Kokomo	H. D
Kirkpatrick, J. B.	Kokomo	R. D	Shirley, D. J	New London	R. 10
Kemp, G. W	Russiaville	R. 3	Thom, J. C. F.	Kokomo	R. D
Johnson, I. C	Kokomo	R. D	Wright, J. W	Kokomo	R. D
Moulder, J. M	Kokomo	R. D	Wilson, R. L	Kokomo	R. D
Miller, A. W	Plevna	E. D	Ware, C. W.	West Liberty	R. D
Miller, L. C	Alto	R. D	Wooley, C. A	Kappa	R. 10

Regular, 36; Homœopathic, 2; Eclectic, 6; not reported, 2.

Huntington County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Bulsford, Jas. W	River	R. D	Lyons, W. B	Huntington	R. D
Bonifield, W. D.	Warren	R. D	Leyman, Emery H	Huntington	R. D
Barns, A. M	West Point	R. D	Leyman, Daniel S	Huntington	R. D
Beaver, H. M	Huntington	R. D	Mitchell, Sam'l P.	Mt. Etna	R. D
Crandles, Thomas	Majenica	E. D	Mackey, James L.	Warren	H. D
Chaffee, Wm. C	Huntington.	R. D	McColgan James	West Point	R. D
Chenowith, Geo. F	Mt. Etna	R. D	McColgan Robert.	West Point	R. D
Carson, W. F	Roanoke	R. D	McLin, Geo. H	Huntington.	H. D
Fry, Chas. H	Bracken	R. D	Palmer, E. W.	Warren	R. D
Fisher, E. S.	Markle	R. D	Scott, N. W	Huntington.	R. D
Fish, W. S	Hoboken	R. D	Severance, Lagrange.	Huntington.	R. D
Good, Chas. H	Warren	R. D	Searles, J. D	Huntington.	R. 10
Grayston, F. C. S	Huntington	R. D	Sprowl, John S	Warren	R. D
Grayston, B. H. B	Huntington.	R. D	Williams, O. B	Andrews	R. 10
Grayston, Chas. E	Huntington.	R. D	Wallace, Leroy S	Hoboken	R. D
Gemmill, Henry C	Markle	R. D	WRIGHT, IRVIN	Huntington	R. D
Kemp, Jos. W	Roanoke	R. 3	Wright, Chas. L	Huntington	R. D
Kilander, Wm. J	Markle	R. D	Wall, Francis M	Warren	R. D
Kuntz, Sylvester	Roanoke	R. D	Yingling, Daniel	Huntington	E. D
Lyons, Ira E	Huntington	R. D	Young, Edward L	Pleasant Plain.	N.R. 10

Regular, 35; Eclectic, 2; Homeopathic, 2; not reported, 1.

Jackson County.

Anthony, James R.	Brownstown	R. D	May, Albert	Crothersville	R. D
Barnes, George O.	Cortland	R. D	McMillan, James P	Medora	R. 10
Bard, Thomas S	Crothersville	R. 10	McCormick, L. R.	Crothersville	R. D
Brooks, Winston	Reddington	N.R. 10	Newkirk, Andrew L	Seymour	R. 10
Cummings, David J	Houston	R. D	Orvis, George Q	Seymour	R. D
Cummings, Hiram A	Mooney	R. 3	Osterman, August G	Dudleytown	R. D
Charlton, Samuel H	Seymour	R. 10	Patrick, Chas. E	Seymour	R. D
Charles, Jasper N	Tampico	R. D	Paxson, J. C	Medora	R. D
Casey, Wm. M	Seymour	R. D	Richards, Thomas J	Mooney	R. 10
Coryell, Samuel	Crothersville	R. D	Reed, E. P	Ewing	R. 10
Chute, George	Freetown	R. 10	Ruddick, Lindley	Seymour	R. D
Converse, Elmer A	Tampico	E. D	Shipman, N. N	Seymour	R. D
Ewing, Francis M	Vallonia	R. 10	Shields, John T	Seymour	R. 10
Gerrish, Millard F	Seymour	R. D	SHIELDS, JAS. M	Seymour	R. D
Galbraith, Thos. S	Seymour	R. 10	Stillwell, Joseph A	Browntown	R. 10
Gibson, George W	Houston	R. 10	Shoemaker, Evan	Jaketown	N.R. 10
Green, Wm. Orris	Chestnut Ridge	R. 10	Tinch, Edward T.	Ewing	R. D
Graessle, George G.	Seymour	R. D	Veasey, A. M	Medora	R. D
Hunter, Chas. A	Reddington.	P.-M. D	Whitehead, W. E	Brownstown	R. D
Kyte, Henry R	Cortland	P.-M. D	Wells, James C	Mooney	R. D
Monroe, Victor H	Seymour	R. 10	Warner, W. H	Crothersville	R. D
Manuel, Grafton	Freetown	R. 10	Wilson, M. V.	Medora	R. 10

Regular, 39; Eclectic, 1; Physio-Medical, 2; not reported, 2.

Jasper County.

ALTER, M. B	Rensselaer	R. D	Loughredge, Victor C.	Rensselaer	R. D
Bitters, F. P	Rensselaer	R. D	London, H	Remington	R. D
Bowman, Wm	Wheatfield	R. 10	Patton, D. H	Remington	R. D
Demming, Jas. C	Rensselaer	R. 10	Porter, Jas. W	Rensselaer	10
Hartsell, W. W	Rensselaer	H. D	Reigle, M. W	Remington	10
Jackson, Mary E	Rensselaer	P.-M. D	Robbins, Ira B	DeMotte	H. 10
Jones, Cyrus V	Kiniman	R. D	Stockwell, Willard.	Wheatfield	10
Loughredge, J. H	Rensselaer	R. D	Washborne, I. B	Rensselaer	R. D

Regular, 10; Homœopathic, 2; Physio-Medical, 1.

Jay County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Anderson, James M	Dunkirk	R. 10	Mincks, F. W.	Portland	H. 3
Arthur, C. S.	Portland	R. 3	Miles, Jacob T	Briant	R. D
Brown, H. V	Portland	R. D	Munsey, Sam'l E	New Mt. Pleasant	R. 10
Bosworth, J. M.	Pennville.	R. D	Mason, Samuel	Pennville.	R. D
Blackledge, L. N	Pennville.	E. D	Neal, William	Portland	R. D
Blackledge, A. J	Pennville	E. D	Poling, S. K.	Portland	E. D
Clevenger, Benj. F	Redkey.	R. D	Ross, John G	Westchester	E. D
Connor, Norris F.	Redkey.	E. D	Rarick, Isaac N	Bluff Point.	P.-M. D
Crouch, Nathaniel W.	Dunkirk	N. R. 10	Ralston, Augustus	New Corydon.	R. D
Dickes, Philip	Boundary.	R. D	Sims, I. G.	Portland	R. D
Dickes, John T	Portland	R. D	Smith, Wm	Portland	N. R. 10
Davis, R. P	Portland	R. D	Shepherd, Thos. S	Portland	R. 10
Fertick, Geo. W	Dunkirk	R. D	Shepherd, Geo. W	Redkey	R. 10
Glentzer, M. A	Briant	N. R. 10	Sage, Ira T	Redkey.	N. R. 10
Gillum, S. A. D.	Portland	R. 3	Stiers, Francis R	Redkey.	E. D
Guy, Samuel D	Briant	N. R. 10	Skinner, David T.	Salamonia	E. D
Hutchens, Henry C.	Portland	E. 10	Stick, Jesse.	Briant	E. D
Hall, John W.	Portland	R. D	Stanton, David S	Portland	R. 10
Horn, Wm. C	Pennville.	R. D	Selvey, S. S	Dunkirk	R. D
Hutchison, Jas. A	Salamonia	R. D	Sanders, C. B	Pennville	P.-M. D
Kidder, Jas. F	New Mt. Pleasant	R. 10	Thomas, S. A.	Pennville	N. R. 10
Kinsey, David S	Portland	R. 3	Thomas, E. Rosa	Redkey.	P.-M. D
Landis, W. H.	Como	R. D	Vail, Isaac M.	Westchester	E. D
MACKEY, CHAS. W.	Portland	R. D	White, T. C	Powers.	N. R. 10
Milligan, A. A	Portland.	P.-M. D	White, Jas. K.	Pennville.	R. D
Morehous, John A	Portland.	P.-M. D	Wicks, James.	Hector	N. R. 10
Moon, Ezra W	Portland	E. D			

Regular, 28; Eclectic, 11; Physio-Medical, 5; Homœopathic, 1; not reported, 7.

Jefferson County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Berngle, J. S	Hanover	R. 10	Lewis, Geo. C.	Madison	R. D
Burdsal, Chas. A	Lancaster	R. 3	Lewis, Geo. B	Dupont.	R. D
Blair, E. B	Bryantsburg	R. D	Lewis, J. F	Dupont.	R. D
Copeland, C. C	North Madison.	R. D	Lewis, S. B	Canaan.	R. D
Coopender, J	Madison	R. D	Lefeber, Jas. M.	Graham	R. D
Christie, J. H.	Canaan.	R. D	Lowder, Wm. G	Brooksburg	R. D
Cogley, T. J	Madison	R. D	Matthews, Jas. H.	Madison	R. D
Cornett, W. T. S	Madison	R. D	Muret, Jas. H.	Madison	R. D
Chastine, Harvey W	Big Creek	R. D	McCOY, WM. A	Madison	R. D
Dixon, Y. C.	Deputy	R. 3	McCarty, Wm. W.	Canaan	R. D
Davis, Jacob T	Madison	R. D	Penn, Ben. A.	Bryantsburg	E. D
Davidson, Wm. R	Madison	R. D	Ryker, Chas.	Manville	R. D
Forker, T. W	Madison	R. D	Reynolds, J. H	Wirt	R. D
Ford, S. M	Madison	R. D	Reynolds, Geo. E.	Kent	R. D
Flanders, J. W	Dupont.	R. D	Rawlings, J. V	Wirt	R. D
Freeman, Wm.	North Madison.	R. D	Smith, Edwin M	Wirt	N. R. 10
Gaylord, H. G	Hanover	R D	Sanderson, Thos	Madison	R. D
Hutchinson, Jos. B.	Madison	H. D	Swan, Lyrus E	Kent	R. D
Hutchings, W. D	Madison	R. D	Townsend, S. M	Madison	R. D
Hewitt, Geo. W.	Madison	R. D	Tevis, R. M	Brooksburg.	R. D
Johnson, A. H	Chelsea.	R. D	Tevis, E. R	Brooksburg.	R. D
Julian, Paris	Swanville	N. R. 10	Wadsworth, Chas.	Madison	R. D
Lewis, Jas. R.	Madison	R. D			

Regular, 41; Homœopathic, 1; not reported, 2.

Jennings County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Adams, S. D	Brewersville	R. 10	Lyle, John M.	Cana	R. D
Amick, C. C	Six Mile	R. D	Light, A. B	North Vernon	R. D
Case, W. W	Zenas.	R. D	Lefeber, James M	Lovett	R. D
Coryea, F. M	Zenas	E. 10	Mitchell, W. J	Vernon	R. D
Firsich, B	North Vernon	N. R. 10	Nelson, H. G	Butterville	R. D
Fall, W. R	North Vernon	R. D	Nighswander, M	Six Mile	R. D
Gaddy, N. D	Lovett	R. D	Phillips, A. W	Scipio.	R. D
Gaddy, Orville	Paris Crossing	R. D	Russell, Benj. F	Paris	R. D
Green, C. H	North Vernon	R. 10	Richardson, N	Vernon	R. D
Green, James H	North Vernon	R. D	Richardson, W. H	Vernon	R. D
Grahn, E. G	North Vernon	H. D	Reamy, W. H	Zenas	N. R. D
Hanna, J. L	Paris Crossing	R. D	Stemm, W. H.	Six Mile	R. D
Hicks, B. R.	Nebraska	P.-M. D	Shepherd, J. F	Queensville	N. R. 10
Kyle, James W.	North Vernon	R. D	Wildman, W. H	San Jacinto	R. D
Kendrick, N. C	Butterville	R. 10			

Regular, 23; Eclectic, 1; Homœopathic, 1; Physio-Medical, 1; not reported, 3.

Johnson County.

Name.	*Post Office.*	*School.*
Adams, J. H	Amity	R. 10
Adams, David	Edinburg.	E. D
Beebe, James	Whiteland	R. 10
Bland, Jno. A	Edinburg	R. D
Byers, R. S	Trafalgar	R. D
Burgett, D. A.	Rocklane	R. D
Covert, G. W	Franklin	R. 3
Carnes, Zachariah	Greenwood	R. D
Cravens, J. R.	Franklin	R. 3
Donnell, J. H.	Franklin	R. 10
Donnell, T. C.	Franklin	R. D
Dobyns, P. K	Whiteland	R. D
Davis, A. T	Edinburg.	R. 10
Farris, J. T	Bargersville	R. D
Fisher, I. C	Needham.	R. D
George. W. E	Franklin	H. D
Gillaspi, F. P	Stone's Crossing	R. D
Hall, W. C	Franklin	R. D
Hall, H. J.	Franklin	R. D
Hibbs, Irwin	Nineveh	R. 10
Jones, J. T	Franklin	R. D
Kegley, Jno. L	Stone's Crossing	R. 3
Lanam, J. H	Edinburg	R. D
Miller, A	Whiteland	R. D
Miller, D. H	Franklin	R. D
Marshall, J. A	Nineveh	R. 3
Maze, V. B	Needham	R. D
Noble, T. B	Greenwood	R. 10
Ott, L. E	Franklin	R. D
Payne, P. W	Franklin	R. D
Payne, C. A	Franklin	R. D
Province, W. M	Providence	R. D
Paine, Luther	Edinburg.	E. D
Quick, R. S	Edinburg	E. D
Rush, W. P	Edinburg	R. D
Ream, J. B	Trafalgar	R. D
Saddler, J. J	Edinburg	R. D
Telford, W. E.	Bargersville	R. D
Wood, Jno. C	Franklin	R. D
Wishard, J. M	Greenwood	R. D
Wallace, B	Franklin	R. D
Willan, E. B	Trafalgar,	R. D
Willan, R. D	Trafalgar	R. D
Wright, A. F	Nineveh	R. D
WHITESIDES, L. L	Franklin	R. D

Regular, 40; Eclectic, 3; Homœopathic, 1.

Knox County.

Name.	*Post Office.*	*School.*
Alexander, James F	Bruceville	R. D
Allen, J. L	Vincennes	H. D
Boyer, Eli	Vincennes	R. D
Beard, F. W	Vincennes	R. D
Beard, Schuyler C	Vincennes	R. D
Busse, Edward P	Vincennes	R. D
Bever, John C	Vincennes	P.-M. 3
Bever, Almira C. W	Vincennes	E. D
Bedell, W. B	Vincennes	R. D
Beckes, Lyman M	Vincennes	R. D
Black, Elijah C	Wheatland	R. 3
Benham, C. W	Wheatland	R. D
Ballard, Joseph H	Vincennes	R. D
Cross, John F.	Vincennes	R. 3
Culbertson, John W	Edwardsport	E. D
Crawford, George B	Emison	R. D
Chancellor, S. R	Decker	R. D
DuKate, John S	Monroe City.	R. D
DuKate, John B. D.	Wheatland	R. D
Davis, Royse	Decker	R. D
Davenport, Wm. H.	Vincennes	R. D
Edmondson, G. W	Monroe City	R. D
Fairhurst, O. C. C	Vincennes	R. D
Grigsby, Wm. B	Oaktown	R. D
Harris, Francis M	Vincennes	R. D
Harris, Wm. B.	Vincennes	R. D
Hensley, John H	Vincennes	R. D
Harrison, Samuel L	Vincennes	R. 3
Hunt, Thomas J	Decker	R. D
Jessup, Robert B	Vincennes	R. D
Jessup, Robert B. Jr	Vincennes	R. D
Kent, Miranda C	Edwardsport	R. D
Keith, Benj. F	Edwardsport	R. D
Kessinger, Wm. E	Sanborn	R. D
Lytton, Jefferson	Wheatland	R. 3
Munford, John R.	Bicknell	R. D
Morgan, John S.	Red Cloud	R. 10
Martin, Zadock G	Bicknell	R. D
Merritt, James N.	Oaktown	R. 3
McGowan, Wm.	Oaktown	R. 10
McDowell, James M	Bruceville	R. D
McDowell, L. C	Freelandsville	R. D
McGanby, A. J	Freelandsville	R. D
Meyer, H'rm'n N. H	Freelandsville	E. 10
Medcalf, Wm. M	Vincennes	H. D
Moore, Reuben G.	Vincennes	R. D
Pearce, Abner B	Vincennes	R. D
Robbins, John F	Freelandsville	R. D
Ray, Joel W	Emison	P.-M. 10
Reeves, Joseph L.	Edwardsport	R. D
Rickets, R. R.	Red Cloud	R. 10
SWARTZEL, J. A	Vincennes	R. D
Smith, H. M	Vincennes	R. D
Skelton, L. S	Vincennes	E. D
Staley, L. B.	Bicknell	R. D
Spaulding, Geo. D	Sanborn	R. D
Sparks, N. B	Monroe City	R. 10
Trout, Robert E	Oaktown	R. D
Trueblood, J. W	Monroe City	R. 3
Von Trees, E. C	Monroe City	R. D
Williams, Jas. T	Monroe City	E. D

Regular, 52; Homœopathic, 2; Eclectic, 5; Physio-Medical, 2.

Kosciusko County.

Amiss, James M	Silver Lake	R. D
Abbott, H B	Etna Green.	
BECKNELL, I. J	Milford	R. D
Burket, C. W	Warsaw	R. D
Burkett, Benj	Warsaw	R. D
Bash, J. M	Warsaw	R. D
Byler, J. M	Warsaw	H. D
Boydston, B. S	Clunette	E. 10
Bacon, Lyman B	Packerton	R. D
Bowser, J. H	Syracuse	R. D
Brackett, B D	Claypool	
Chandler, Jos. A	Warsaw	R. 3
Cammack, Thomas	Milford	R. D
Clayton, Calvin M	Warsaw	E. 10
Dick, Milford L	Pierceton	P.-M. D
Defrees, H. J	Millwood	R. D
Gregory, Geo. B	Warsaw	H. D
Hayes, Wm	Pierceton	E. D
Hiffley, John W	Mentone	E. D
Holloway, John N	Etna Green.	E. D
Hoopinsamer, Geo. B	Sidney	R. D
Hoever, J. S	Gravelton	H. D

Kosciusko County—Continued.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Hazel, John B	Claypool	R. D	Robinson, A. B	Mentone	R. D
Ihrig, Francis M	Syracuse	E. D	Robinson, Sarah M.	Warsaw	E. 10
Junkin, S. D	North Webster	R. 10	Swyhart, C. M	Warsaw	P.-M. D
Johnston, E. E	Leesburg	R. D	Swyhart, Anna	Warsaw	P.-M. D
Johnson, A. R	Pierceton.	H. 10	Smith, James S.	Warsaw	P.-M. D
King, H. O	Pierceton.	R. D	Snodgrass, S. J	Burket.	P.-M. D
Ketchum, George	Claypool	R. D	Shackelford, T. J.	Warsaw	R. D
Kelly, Wm. M	Etna Green.	R. D	Sherbondy, Geo. W.	Silver Lake.	E. 3
Keehn, Levi	Milford.	H .10	Stockbarger, E	Mentone	R. 3
Kiplinger, Wm	Burket	10	Swigart, Henry M	Mentone	R. D
Long, C. R	Pierceton.	R. D	Schoonover, Wm. R	Warsaw	R. D
Leech, R. V	Oswego	R. D	Terry, P. E	Silver Lake.	R. 3
Moody, T. F	Pierceton.	R. D	Tenant, Lewis H	Pierceton.	E. 10
Moro, Francis	Warsaw	E. D	Vaughn, Martin	Burket	R. 3
Marine, John W	Etna Green	P.-M. D	Wall, James J	Beaver Dam	P.-M. D
Ogle, John J	North Webster	E. 10	White, R. Parks	Warsaw	R. D
Pearman, F. M	Palestine	R. D	Webber, I. B	Warsaw	R. D
Parker J. W	Oswego	E. 10	Woolley, Amos.	Warsaw	E. D
Parks, John P	Atwood.	R. D			

Regular, 32; Homœopathic, 4; Eclectic, 11; Physio-Medical, 7; not reported, 3.

Lagrange County.

Benham, Frank A	Lagrange.	H. D	Raby, William	Wolcotville.	E. 10
Broughton, F. H	Wolcotville.	R. D	Rawls, J. W	Mongo	R. 10
Dayton, George H	Lima	R. D	Schrock, H. W	Shipshewanna	R. D
Dancer, John.	South Milford	R. D	Schrock, J. J	Emma	R. D
Dryer, Dwight W.	Lagrange.	R. D	Spalding, A. M	Brushy Prairie	R. 10
Engle, J. B	Lagrange.	R. 10	Short, W. H.	Lagrange.	R. D
Eash, Sam M	Hawpatch	R. D	Short, J. L	Lagrange.	R. D
Furgerson, W. A	Brighton	R. D	Strawn, E. K	Wolcotville.	R. D
Goodrich, Charles D	Lima	R. D	Toms, Alpheus	Scotts.	R. D
Grubb, W B	Scotts.	R. 10	Vaughn, I. J	Hawpatch	R. D
Hughes, William	Lima	R. D	Waddell, Chas	Lagrange.	R. D
Heslip, J. M	Mount Pizgah	E. 10	White, E. G.	Lagrange.	R. D
Newman, H. M	South Milford	R. D	WYATT, A. R	Lagrange.	R. D
Price, Henry B	Woodruff	R. D	Younkins, Jerome W.	Wolcotville.	R. 10

Regular, 25; Eclectic, 2; Homœopathic, 1.

Lake County.

Bacon, E. R	Lowell	R. D	McClure, George H	Hammond	R. D
Ball, Herbert S	Crown Point	E. D	Merrill, Warren W	Hammond	E. D
Bliss, M. G	Crown Point	E D	Miller, Hosea F. C	Hobart	R. D
BRANNON, G. D	Crown Point	R. D	Mullen, Hugh E	Hammond	R. D
Davis, John E	Lowell	R. D	Pettibone, Harvey	Crown Point	R. 3
Gray, Frank P	East Chicago	R. D	Pettibone, Henry	Crown Point	R. D
Gibbs, James C	Crown Point	H. D	Pratt, A. J	Crown Point	R. D
Groman, Charles	Brunswick	H. 10	Reading, A. H	East Chicago	E. D
Gordon, P. P	Hobart	R. D	Reading, Rose	East Chicago	E. D
Gerrish, A. A	Lowell	R. D	Schreiber, Wm	Hanover Center	E. D
Higgins, John	Crown Point	R. D	Schroeder, N. J	Hobart	R. D
Hill, Jesse L	Lowell	R. D	Seidler, Anthony	Dyer	R. 10
Iddings, Homer L	Merriville	R. D	Swartz, H. P	Crown Point	R. 10
King, Charles W	Crown Point	E. 3	Turner, ———	Dyer	R. D
Mackey, Richard	Deep River	E. D	Wood, J. A	Lowell	R. 10

Regular, 20; Eclectic, 8; Homeopathic, 2.

Laporte County.

Annis, E. L.	Laporte.	R. D	Darling, N. S	Laporte.	R. D
Andrew, G. L.	Laporte.	R. D	Dakin, G. M	Laporte.	E. D
Brown, D. T	Michigan City	R. D	Ellsworth, H. N	Kingsbury	R. D
Bowell, B. C	Rolling Prairie.	E. D	Fisher, W. H	Wanatah	R. D
Crumpacker, D. S	Union Mills	R. 10	Fravel, T	Westville.	R. D
Chaffee, F.	Laporte.	R. D	Fahnestock, C. S	Laporte.	H. D
Cole, E. Z.	Michigan City	H. D	Fahnestock, A. A.	Laporte.	H. D
Calvert, R. H	Michigan City	R. D	Godfrey, W. R	Michigan City	R. D
Combs, Thos. W	Westville.	H. D	Hollenbeck, B. W	Westville.	R. 3
CRANDALL, R. O	Laporte.	R. 10	Keene, L. S	Laporte.	R. D

Laporte County—Continued.

Name.	Post Office.	School.	Name.	Post Office.	School.
Lambert, J. N	Laporte	R. D	Stevens, Mrs. M. A.	Laporte	E. D
Ludwig, J	Laporte	H. D	Short, R. B	Union Mills	R. D
Martin, J. S.	Rolling Prairie	R. 10	Tillotson, A. G	Michigan City	E. D
Meyer, J. H. Wm	Laporte	R. D	Whiting, S. C.	Laporte	H. D
Mullen, A. J., Jr	Michigan City	R. D	Wilson, W. B	Rolling Prairie	E. 10
Rose, L. C.	Laporte	R. D	Wile, Jacob	Laporte	R. D
Rogers, E. A	Laporte	R. D	Warren, O. R	Otis	R. D

Regular, 23; Eclectic, 5; Homoeopathic, 6.

Lawrence County.

Allen, J. T.	Mitchell	R. D	Larkin, John B.	Mitchell	R. D
Allen, Edward F	Fayetteville	R. 10	LAFORCE, H. C	Bedford	R. D
Burton, William A	Mitchell	R. D	Lowder, Cyrus	Springville	R. 3
Burton, Geo. W	Mitchell	R. D	McDonald, A. J	Bedford	R. D
Burton, John.	Georgia	R. 10	McIntyre, Elihu S	Mitchell	R. D
Bare, Addison W.	Bryantsville	R. D	McLaughlin, Oliver	Bartlettsville	R. 10
Butler, W. C	Heltonsville	R. 3	Meadows, Jacob	Bartlettsville	R. 10
Berry, Alfred F.	River Vale	R. 3	Mitchell, Elijah E	Avoca	R. D
Dixon, Henry C	Tunnelton	R. D	Newland, Wesley J.	Bedford	R. D
Donica, Thomas M	Tunnelton	R. 10	Pearson, James C.	Mitchell	R. D
Ellison, W. T.	Helstonville	R. 10	Phipps, Madison J	Bedford	R. D
Faubion, James	Heltonsville	R. D	Powell, J. E	Huron	R. D
Faucett, John H	Williams	R. D	Rariden, S. A.	Bedford	R. 10
Freeland, John T:	Bedford	R. D	Rariden, Chas. E	Bedford	R. D
Gardner, Joseph	Bedford	R. D	Smith, William H	Leesville	R. 10
Hunter, Sheldon F	Fort Ritner	R. D	Smith, Spencer W	Leesville	R. D
Hornocker, Simon D	Silverville	R. 10	Voyles, Harvey.	Fayetteville	R. D
Johnson, J. James	Bedford	R. D	Yost, J. L. W.	Bedford	R. D
Judah, W	Bedford	R. 10	Yandell, William	Huron	R. 10

Regular, 38.

Madison County.

Armington, C. L	Chesterfield	R. 3	Harter, Jacob H	Anderson	R. 3
Atherton, R. M.	Anderson	H. D	Hilligass, G. H	Anderson	R. 3
Armfield, J. D	Elwood	R. —	Hougham, J. S	Perkinsville	E. 3
Alexander, H. E	Pendleton	R. D	Horn, Wm. N.	Anderson	R. D
Armington, J. G	Chesterfield	R. D	Hamilton, F. H.	Alexandria	R. D
Ardery, Oscar	Anderson	R. D	Hammond, Jno.	Anderson	N. R. D
BRANCH, C. N	Anderson	R. D	Jones, Horace E	Anderson	R. D
Broadbent, Oliver	Moonsville	R. D	Jones, J. N	Lapelle	N. R. D
Brown, Martin	Summitville	R. D	Lewis, W. H	Pendleton	R. D
Brickley, W. P	Anderson	P.-M. D	Line, L. C.	Alexandria	N. R. D
Brownback, O. W	Pendleton	R. D	McGrannahan, G. W.	Anderson	R. D
Bulla, ——	Anderson	R. 10	McNutt, G. T.	Elwood	R. D
Burr, C. S.	Anderson	R. D	Moore, J. Rollin	Lapelle	N. R. D
Chittenden, Geo. W	Anderson	R. D	Morgan, Gillman.	Gilman	R. 10
Coverston, J. W	Frankton	R. 10	Marlow, Austin F	Summitville	P.-M. D
Calloway, Beniah T	Elwood	R. 10	Moore, J. R.	Lapelle	N. R. —
Cranefield, M. G	Summitville	N. R. 10	Manville, J. H	Columbus	N. R. —
Cook, Ward.	Pendleton	R. D	Nuzum, D. P	Elwood	E. 3
Cullen, J. C.	Anderson	R. D	Perry, Andrew J	Alexandria	R. 3
Cook, Daniel	Fishersburg	R. 10	Perry, J. W	Alexandria	R. D
Chiles, B. F	Frankton	P.-M. —	Pugh, Joseph W	Alexandria	R. 3
Cook, Joel	Orestes	R. 3	Petro, Benj. G	Markleville	R. 10
Diven, C. E	Perkinsville	R D	Pratt, C. C	Ovid	— —
Davidson, J. W.	Pendleton	P.-M. 10	Preston, G. T	Anderson	R. D
Davis, J. W.	Anderson	P.-M. D	Rogers, Ellen.	Pendleton	H. 10
Ebert, J. D	Dundee	R. D	Redding, ——	Anderson	P.-M. —
Edwins, S. W	Frankton	R. D	Rider, D. M.	Anderson	R. D
Fussel, Landy B	Markleville	R. D	Riggs, ——	Linwood	N. R. —
French, Wm. J	Frankton	R. D	Stewart, Jonas	Anderson	R. D
Fisher, J. M	Fishersburg	R. 10	Stuart, ——	Linwood	R. —
Fairfield, W. H.	Anderson	R. D	Sigler, Daniel	Elwood	R. D
Fairfield, Nellie	Anderson	R. D	Swallow, Geo. E	Summitville	R. D
Feisher, A. W	Anderson	R. D	Sims, Thomas S	Elwood	E. 10
Fallis, A. G.	Summitville	R. D	Saunders, Joseph.	Anderson	R. D
Garritson, W. M	Perkinsville	R. D	Spann, B. F.	Anderson	R. D
Guisinger, J. S	Florida	R. 10	Van Meter, I. H	Florida	R. 3
Gime, James F	Elwood	P.-M. D	Van Nuys, Wm.	Anderson	R. D
Graham, J. J	Lapelle	H. D	Wickersham, Noah.	Anderson	R. D
Hockett, Zimri	Anderson	H. D	Wright, C. R	Linwood	R. D
Harter, Wm. P	Anderson	R. 3	Willson, S. C	Anderson	R. D
Hunt, J. W	Alexandria	R. D	White, F. W	Summitville	N. R. D
Huston, A. S	Pendleton	P.-M. D	White, J. W	Summitville	N. R. D

Regular, 57; Eclectic, 3; Homœopathic, 3; Physio-Medical, 8; not reported, 10.

Marion County.

Name.	*Post Office.*	*School.*	
Abbett, Chas. H	Indianapolis	E.	3
Abbett, Francis M	Indianapolis	E.	D
Adams, Abbie M	Indianapolis	R.	D
Allen, Horace R	Indianapolis	R.	3
Allen Wesley	West Newton	R.	D
Anderson, Jas. E.	Indianapolis	R.	D
Anthony, Emanuel	Indianapolis	P-M.	D
Anthony, Elisha G	Indianapolis	P-M.	D
Bacon, Edgar H	Indianapolis	H.	10
Baker, A. B	Indianapolis	E.	D
Ball, Addison W	Indianapolis	R.	D
Ballard, Joseph	Indianapolis	R.	D
Barbour, E. P	Indianapolis	R.	D
Barnes, Chas. A	Southport	R.	D
Barnes, Henry F	Indianapolis	R.	D
Barrett, Jas. L	Indianapolis	N. R.	—
Bates, Joseph W	Broad Ripple.	R.	D
Baughman, S. S	Indianapolis	R.	D
Bedford, C. T	Indianapolis	P-M.	D
Beebinger, John	Cumberland	R.	D
Bell, Guido	Indianapolis	R.	D
Bennett, Peter S	Indianapolis	R.	10
Bentley, W. R	Indianapolis	H.	D
Bigger, Robert H.	Indianapolis	R.	D
Bigger, Richard T	Indianapolis	R.	D
Blitz A	Indianapolis	R.	D
Bobbs, Andrew J.	Indianapolis	R.	D
Boland, K. H.	Indianapolis	R.	D
Bowers, D. W.	Indianapolis	P-M.	D
Brown, E. A	Brightwood.	R.	D
Bowers, John V	Millersville	R.	D
Boyce, L. E.	Millersville	R.	D
Boyd, Jas. T	Indianapolis	H.	D
Boyd, L. E	Indianapolis	R.	D
Boyden, Wilbur A	Indianapolis	R.	D
Brayton, Alembert.	Indianapolis	R.	D
Brennan, Edward J	Indianapolis	R.	D
Briggs, Elmer	Indianapolis	H.	D
Blu, Uriah L	Indianapolis	E.	10
Brown, Coryden	Gallaudet	H.	D
Brown, Geo. J	Indianapolis	R.	3
Brown, John R	Insane Hospital	R.	D
Brown, John S	Indianapolis	R.	3
Brown, Josiah L	Indianapolis	R.	D
Brown, Samuel M	Gallaudet	R.	10
Browne, Henry J.	Indianapolis	R.	D
Browning, Wm. J	Indianapolis	R.	D
Browning, Wm M	Indianapolis	R.	D
Bryan, Thos. N.	Indianapolis	R.	D
Bryan, David C.	Indianapolis	R.	D
Bryant, James	Indianapolis	N. R.	10
Brynes, Daniel C.	Indianapolis	R.	D
Bryson, Rachel Ann	Indianapolis	P-M.	
Burford, J. T.	Indianapolis	R.	D
Butterfield, W. W	Indianapolis	R.	D
Butterfield, S. A	Indianapolis	R.	D
Cain, J. C.	Haughville	R.	D
Campbell, Levi S.	Indianapolis	R.	D
Cameron, J. J	Indianapolis		D
Carter, Jas	Indianapolis		3
Carter, Nathan P.	Mapleton.	R.	D
Carey, Geo. A.	Indianapolis	R.	D
Cary, E. E	Indianapolis	R.	D
Carson, L. O	Trader's Point	R.	D
Casel, L. B	Indianapolis	R.	3
Carwin, James M.	Indianapolis	?	10
Clark, Wm. H	Indianapolis	R.	10
Clemmer, F. O	Indianapolis	H.	D
Cline, L. C	Indianapolis	R.	D
Cloud, Caleb S	Indianapolis	?	10
Cable, Geo. A.	New Augusta.	R.	D
Churchill, John C	Indianapolis	R.	D
Combs, Geo. W.	Indianapolis	R.	D
Comingor, John A	Indianapolis	R.	D
Cook, Geo. J	Indianapolis	R	D
Collins, Wm. F	Cumberland	R.	10
Compton, J. A	Indianapolis	H.	D
Conner, Wm. H	Indianapolis		10
Cooper, Chas. A	Indianapolis	?	10
Cooper, Wm. C	Indianapolis	E.	D
Cory, Andrew F	Oaklandon	E.	D
Cox, Joseph	Indianapolis	R.	D
Cress, John B	Indianapolis	E.	D
Canter, S. J	Indianapolis	R.	D
Crist, D. O	Indianapolis	R.	D
Culver, Thos. M	Indianapolis	E.	D
Cunningham, H. S	Indianapolis	R.	D
Curry, Thos. W	Southport	R.	D
Daniels, E. A	Indianapolis	R.	D
Darrach, Geo. W	Cumberland	R.	D
Daughters, Andrew U.	Indianapolis	R.	D
Daughtery, John H	Irvington	R.	D
Dudley, H. A	Indianapolis	R.	D
Davidson, J. C	Indianapolis	P-M.	D
Davidson, G. U	Indianapolis	P-M.	D
Davis, R. A	Indianapolis	R.	D
Davis, Wm. C	Indianapolis	R.	D
Davis, Jacob A	Indianapolis	P-M.	D
Denkewalter, F. W	Indianapolis	R.	D
Denson, H. A	Indianapolis	R.	D
DePuy, A. H	Indianapolis	E.	D
Divens, C. W	Indianapolis	E.	D
Duncan, Hiram	Indianapolis	R.	D
Dunlap, John M	Indianapolis	R.	D
Dunning, L. H	Indianapolis	R.	D
Dunning, James H	Indianapolis	R.	D
Earp, S. E	Indianapolis	R.	D
Eastman, Joseph	Indianapolis	R.	D
Ebberts, J. A	Indianapolis	R.	D
Edenharter, G. S	Indianapolis	R.	D
Elbert, S. A	Indianapolis	R.	D
Elder, Elijah S	Indianapolis	R.	D
Ellis, Wilson	Indianapolis	R.	D
Egolf, H. M	Indianapolis	R.	D
Ewing, C. K	Malott Park	R.	D
Farmer, Samuel W.	Indianapolis	E.	D
Feree, S. W	Indianapolis	R.	D
Ferguson, Frank	Indianapolis	R.	D
French, Mullen E	Indianapolis	R.	D
Field, M. H	Indianapolis	R.	D
Field, E. U	Cumberland	R.	D
Fisher, A. W	Indianapolis	P-M.	D
Fletcher, C. I	Indianapolis	R.	D
Fletcher, Wm. B	Indianapolis	R.	D
French, Mattie J	Indianapolis	R.	D
Freitshy, John M	Indianapolis	H.	10
Frink, C. W	Indianapolis	R.	D
Galloway, Clinton	Indianapolis	R.	D
Garrison, James	Indianapolis	N.	R
Garver, John J	Indianapolis	R.	D
Gill, John	Indianapolis	N. R.	10
Green, L. M	Indianapolis	R.	D
Gray, Wm	Indianapolis	R.	D
Graydon, R. G	Southport	R.	D
Griggs, Oscar B.	Bridgeport	R.	D
Hadley, Evan	Indianapolis	R.	D
Harold, David H	Indianapolis	P-M.	D
Hart, W. M	Indianapolis	P-M.	D
Harvey, Wm. D.	Indianapolis	R.	D
Hasty, Geo	Indianapolis	P-M.	D
Haugh, John A	Indianapolis	R.	D
Haynes, John R	Indianapolis	H.	D
Hays, F. W	Indianapolis	R.	D
Hamilton, J. A.	Indianapolis		10
Haynes, A. H.	Indianapolis	R.	D
Heil, Chas. P	Indianapolis	E.	D
Helming, H.	Indianapolis		10
Heltman, J. K	Oaklandon	R.	D
Hendricks, H. W	Indianapolis	E.	D
Henthrone, L. S	Indianapolis	R	D
Hervey, Edwin V.	Indianapolis	R.	D
Hervey, Jas. W.	Indianapolis	R.	D

Marion County—Continued.

Name.	*Post Office.*	*School.*
Hettinger, J. B	Indianapolis	(?) D
Hinshaw, Thos	Nora	R. D
Hodges, Edward F	Indianapolis	R. D
Hopkins, A. G	Indianapolis	R. D
Houser, James A	Indianapolis	E. D
Hoover, John E	Indianapolis	R. D
Hoss, Jacob V	Indianapolis	R. D
Howard, Edward	Indianapolis	E. D
Hurley, M. F	Indianapolis	E. 3
Jameson, P. H	Indianapolis	R. D
Jameson, Henry	Indianapolis	R. D
Jeffries, W. E	Indianapolis	R. D
Jones, Stephen	Indianapolis	E. D
Johnson, R	Indianapolis	R. D
Johnson, W. H	Brightwood	R. D
Jordan, Jno. S	Indianapolis	E. D
Jordan, L. W	Indianapolis	H. D
Karstitter, Wm. B	N. Indianapolis	R. D
Keen, Daniel V	Indianapolis	
Kendal, R. A	Indianapolis	
Kennedy, John Y	Acton	R. D
Knight, O. C	Indianapolis	E. D
Keller, Christopher	Indianapolis	10
Kendleberger, W. H	Indianapolis	R. D
Kendrick, W. H	Indianapolis	E. D
Kerley, R. M	Indianapolis	R. D
Kitchen, John M	Indianapolis	R. D
Kidd, W. J	Indianapolis	E. D
Kishaddin, Henry	Indianapolis	D
Koch, A. J	Indianapolis	P.-M. D
Krumrine, J. A	Irvington	R. D
Lampton, G. W	Indianapolis	10
Laycock, R. T	Indianapolis	E. D
Lewis, E. R	Indianapolis	R. D
Lewis, James	Indianapolis	D
Lockridge, Jno. E	Indianapolis	R. D
Long, Henry	Indianapolis	E. D
Long, John B	Indianapolis	R. D
Long, R W	Irvington	R. D
Lutz, Geo. W	Indianapolis	R. D
MANKER, F. E	Indianapolis	R. D
Mapes, Smith H	Lawrence	R. D
Martin, Francis	Indianapolis	R. D
Martin, W. F	Indianapolis	R. D
Marsee, Joseph W	Indianapolis	R. D
Maxwell, Allison	Indianapolis	R. D
Mendenhall, A. B	Indianapolis	R. D
Mendenhall, Elijah	Indianapolis	R. D
Metcalf, Chas. N	Indianapolis	R. D
Meyers, John M	Indianapolis	R. D
Mills, Seth	Valley Mills	R. D
Miller, Edward	Indianapolis	— 10
Milligan, Jas. W	Indianapolis	R. D
Moffett, E. D	Indianapolis	R. D
Moffett, F. C	Indianapolis	E. D
Monroe, Jasper	Indianapolis	R. D
Montague, T. T	Indianapolis	E. D
Moore, S. H	Indianapolis	R. D
Moore, Mark W	Indianapolis	R. D
Moore, Thos	Indianapolis	— 3
Moore, Wm. G	Indianapolis	R. D
Morgan, W. V	Indianapolis	R. D
Morrison, F. A	Indianapolis	R. D
Morrow, J E	Indianapolis	R. D
Mühl, Emil	Indianapolis	R. D
McCabe, Henry	Indianapolis	E. D
McCain, T. J	Indianapolis	R. D
McClellan, A	Indianapolis	R. D
McConnell, L. C	Indianapolis	R. D
McDonald, W. B	New Augusta	R. D
McGaughey, Samuel	Acton	R. D
McKhan, William	Indianapolis	R. D
McLain, L. C	Indianapolis	R. D
McKeowen, John	Indianapolis	R. D
McNutt, W. Y	Indianapolis	R. D
Neff, Daniel	Indianapolis	— 10
New, Geo. W	Indianapolis	R. D
Nesbit, Joseph A	Castleton	R. D
Noble, Edward	Indianapolis	E. D
Oliver, D. H	Indianapolis	R. D
Oliver, A. H	Indianapolis	R. D
Oliver, J. H	Indianapolis	R. D
Park, H. A. S	Indianapolis	E. D
Partlow, Jno W	Indianapolis	R. D
Parsons, Jno. S	Indianapolis	E. 10
Patterson, A. W	Indianapolis	R. D
Patterson, E. R	Indianapolis	E. D
Pantzer, H. O	Indianapolis	R. D
Payne, Jas. H	Julietta	R. D
Peachee, Harrison	Maywood	R. 10
Pearson, C. D	Indianapolis	R. D
Penny, H. F	Indianapolis	R. D
Perry, Ralph St. John	Indianapolis	H. D
Pfaff, O. G	Indianapolis	R. D
Pettijohn, O. B	Indianapolis	R. D
Pickerell, Geo. W	Indianapolis	E. D
Pink, Herman	Indianapolis	R. D
Potter, Theo	Indianapolis	R. D
Porter, G. D	Indianapolis	R. D
Prunk, D. H	Indianapolis	E. D
Purman, D. M	Indianapolis	R. D
Ratcliff, Barclay	West Newton	R. D
Rea, Wm. D	Indianapolis	E. D
Reed, Wilson	Indianapolis	H. T. —
Reynolds, Geo. W	Indianapolis	R. D
Reade, Jeremiah	Traders' Point	R. D
Records, Samuel	Lawrence	R. D
Raymond, Thos. U		R. D
Ridpath, H W	Indianapolis	R. D
Ritter, C. L		R. D
Robeson, W. C	Indianapolis	R. D
Roberts R. A	Indianapolis	R. D
Robertson, D. W	Indianapolis	R. D
Robbins, Wesley	Indianapolis	E. D
Robinson, W. J	Indianapolis	E. D
Roesgen, John P	Indianapolis	10
Rooker, James I	Castleton	R. D
Rowe, L. M	Indianapolis	R. D
Rowley, William	Indianapolis	H. D
Rubrush, T. R	Indianapolis	R. D
Rutledge, W. V	Indianapolis	E. D
Runnels, O. S	Indianapolis	H. D
Runnels, Sollis	Indianapolis	H. D
Sarber, W. H	Indianapolis	E. D
Schmit, E	Indianapolis	E. D
Selman, A. G	Indianapolis	10
Serrin, James E	Indianapolis	R. D
Sellers, T. P	Indianapolis	R. D
Silvey, Hilary	Castleton	3
Sims, J. T		R. D
Smith, A. J	N. Indianapolis	E. D
Smith, Mary	Indianapolis	R. D
Smith, Walter		P-M. D
Snowden, Jessie	N. Indianapolis	R. D
Spees, George W	Glenn's Valley	R. D
Spicer, J. W	Acton	R. D
Spink, M. A	Indianapolis	R. D
Spohr, J. C	Indianapolis	R. D
Stillson, Joseph	Indianapolis	R. D
Stockton, Sarah	Indianapolis	R. D
Stratford, I. W	Indianapolis	R. D
Stein, Frederick	Indianapolis	R. D
Stone, R. French	Indianapolis	R. D
Stephenson, J. C	Indianapolis	R. D
Shafer, Henry		10
Sutcliff, John	Indianapolis	R. D
Swain, Rachel	Indianapolis	E. D
Stevens, James E	Indianapolis	P-M. D
Swain, Fremont	Indianapolis	R. D
Taylor, James H	Indianapolis	R. D
Thomas, A. J	Insane Hospital	R. D
Thomas, E. C	Haughville	R. D

Marion County—Continued.

Name.	Post Office.	School.	
Thomas, W. H	Indianapolis	R.	D
Thompson, D. A	Indianapolis	R.	D
Thompson, J. L	Indianapolis	R.	D
Thompson, W. C	Indianapolis	R.	D
Todd, L. L	Indianapolis	R.	D
Tolly, W. C	Indianapolis	R.	D
Tomlinson, V. B	Indianapolis	R.	D
Thomson, O. K	Indianapolis	R.	D
Vernon, Geo. W	Indianapolis	R.	D
Wagner, Theo. A.	Indianapolis	R.	D
Waide, Robert	Indianapolis	P-M.	D
Walker, John C.	Indianapolis	R.	D
Walker, I. C	Indianapolis	R.	D
Walker, Jos. B	Indianapolis	R.	D
Wail, David	Clermont	R.	D
Wall, Jas. S	Haughville	E.	D
Walters, P. J	Indianapolis	R.	D
Warner, W. H	Indianapolis	R.	D
Wands, Wm	Indianapolis	R.	D
Ward, A. O	Indianapolis	R.	D
Waterman, L. D	Indianapolis	R.	D
Webb, Joshua	Indianapolis	—	10
Weiss, C. G	Indianapolis	R.	D
Westhoelter, C. A	Indianapolis	—	3
Wells, B. P	Indianapolis	R.	D
White, A. R	Indianapolis	R.	D
White, S. M.	Indianapolis	P-M.	D
White, G. J	Indianapolis	E.	D
Williams, Jas. R	W. Indianapolis	—	10
Williams, R. T	Indianapolis	—	10
Wishard, W. H	Indianapolis	R.	D
Wishard, W. N	Indianapolis	R.	D
Wilson, Amos L.	Indianapolis	R.	D
Wilson, C. L	Indianapolis	R.	D
Woehrman, E. A	Indianapolis	H.	D
Wood, Clare	Haughville	E.	D
Wood, Levi	Indianapolis	P-M.	D
Wood, N. V.	Indianapolis	R.	D
Woodburn, Jas. H	Indianapolis	R.	D
Woodburn, F. C	Indianapolis	R.	D
Woodard, U. D	Indianapolis	P-M.	D
Woodward, S. G	Indianapolis	R.	D
Woolen, G. V.	Indianapolis	R.	D
Woolfolk, J. P	Indianapolis	R.	D
Wright, C. E	Indianapolis	R.	D
Wright, J. E	Indianapolis	E.	D
Yoke, Chas	Bridgeport	R.	D
Young, Jas	Indianapolis	—	10
Young, Thos. J	Indianapolis	R.	D
Young, W. L	Indianapolis	E.	D

Regulars, 253; Eclectic, 45; Homœopathic, 14; Physio-Medical, 19; not reported, 31.

Marshall County.

Babcock, Isaac L.	Maxinkuckee	E.	D
Bower, Isaiah	Plymouth	R.	10
Borton, F. A	Plymouth	R.	10
Baker, Joseph	Plymouth	E.	10
Bell, John F	Inwood	R.	10
Brooke, Jared E	Plymouth	R.	D
Caillat, Victor	Argos	R.	10
Chapman, Clark	Argos	E.	10
Denniston, James M	La Paz	R.	10
Dunlap, Elizabeth W.	Plymouth	H.	10
Dillenius, Erwin	Bourbon	R.	D
Eidson, J. W	Bourbon	R.	D
Eley, Lorenzo D	Ilion	R.	D
France, Samuel	Bourbon	R.	D
Gould, S. W.	Argus	R.	D
Herring, N. A	Bremen	E.	D
Holtzendorff, A. C	Plymouth	R.	D
Hamilton, J. J	La Paz	R.	D
Johnson, Luther	Bourbon	R.	10
Knott, David C.	Argos	E.	D
Kendall, J. T	Walnut	R.	D
Kiser, James H.	Inwood	R.	D
Keiservetter, P. H	Bremen	R.	D
Linn, Timothy T	Bourbon	R.	3
Loring, Samuel C.	Burr Oak	R.	D
Martin, J. S.	Plymouth	H.	D
Miller, Allen G.	Berlinton	H.	D
Moore, Allen	La Paz	R.	D
Moore, Chas. W.	Tyner City	R.	D
Matchette, A. C.	Bourbon	R.	D
Neville, R	Teegarden	R.	10
Oyler, Wm. A.	Argos	R.	3
Pocock, Elias H	Walnut	R.	D
Richey, Samuel R	Donaldson	R.	10
Rea, Oliver A.	Marmont	R.	D
Reynolds, G. R.	Plymouth	R.	D
Smith, J. W.	Plymouth	R.	D
Sutton, James A	Argos	R.	10
Spencer, Joseph	Tippecanoetown	E.	10
Tripp, Franklin	Bremen	E.	10
Viets, E. W.	Plymouth	H.	D
Wahl, G. Franklin	Bremen	R.	D
Wiseman, B. W. S	Marmont	R.	D
WILSON, JAS. H	Plymouth	R.	D
Younkman, A. B	Bremen	R.	D

Regular, 34; Eclectic, 7; Homeopathic, 4.

Martin County.

Brittain, S. W	Loogootee	R.	D
Condee, Lyman A	Lost River	R.	D
Campbell, J. E. L	Loogootee	R.	3
Courtney, Thomas	Lost River	R.	3
Dooley, Michael M.	Loogootee	R.	D
Dollens, T. C	Trinity Springs	R.	3
Gray, William	South Martin	R.	10
McNabb, O. H	Keck's Church	R.	10
Plummer, Q. N	Shoals	R.	D
PORTER, H. W	Loogootee	E.	D
Robinson, George M	Loogootee	R.	3
Shirley, Henry W	Shoals	R.	D
Sims, Jasper N	Dover Hill	E.	3
Solomon, J. J.	Shoals	P.-M.	D
Trueblood, J. C.	Loogootee	R.	D
Thomas, Wm. J	Keck's Church	R.	10
Walls, G. W	Shoals	R.	D

Regular, 14: Eclectic, 2; Physio-Medical, 1.

Miami County.

Name.	*Post Office.*	*School.*
Alford, Henry	Peru	R. 10
Ager, N. A	Peru	R. D
Armstrong, W. K.	Mexico	R. 3
Achoe, G. R	Xenia	Lost record.
Ader, Henry	Xenia.	N. R
Brower, Joseph	Gilead	E. D
Baldwin, J. A	Amboy	E. 10
Belew, John C	Chili	E. 10
Barnes, John.	Macy	R. 10
Boggs, M. M	Macy	R. 10
Brenton, W. W	Peru	R. D
BLOOMFIELD, E. M	Peru	R. D
Black, F. M.	Peru	E. D
Baldwin, M. F	Xenia.	E. D
Campbell, E. L	Miami	R. 3
Davis, G. W	Miami	E. D
Drinkwater, E. H	McGrawsville	N. R
Day, T. J	Miami	N. R
Friermood, E. K	Amboy	R. D
Frets, J. C	Deedsville	R. 5
Graham, B. R	Peru	R. D
Gray, B. J	North Grove	R. 3
Higgins, C. B.	Peru	R. D
Howe, L. E.	Xenia.	N. R
Helm, John H	Peru	R. D
Helm, J. C	Peru	R. D
Ijams, Thos. F	North Grove	R. D
Kersey, J. B	Xenia	P.-M 3
Kalbfish, A. H	Miami	H. D
Kelsey, Jeremiah S	Xenia.	R. D
LaDue, John	Denver	R. 10
Lawshe, J. J	Wawpecong	R. D
Litzenburger, O. P	Xenia.	R. 3
Marsh, S. S	Peru	R. D
More, John W	Mexico	P.-M. D
Meek, Jas. A	Bunker Hill	R. D
Maughmer, G. C	Wawpecong	R. D
McDowel, H. P.	Bunker Hill	R. D
Mendenhall, A. O	Xenia.	R. D
Newell, J. M	Denver	R. D
Owen, Zoevia.	Peru	R. D
Peters, R. J. D	Macy	N. R
Peters, J. B.	Macy	R. 10
Pence, Rollins	Peru	R. 10
Passage, H. V	Peru	R. D
Rutherford, C. E	Peru	H. D
Ramsey, S. G	Peru	R. D
Ross, R. H	Bennetts	R. D
Robbins, J. Q. A	Denver	R. D
Ridenour, David	Chili	R. D
Smith, R. W	Xenia.	R. D
Stewart, F. C	Peru	H. D
Stewart, W. B	Peru	H. D
Smith, A. F.	Wawpecong	R. D
Sutton, E. H	Macy	R. 10
Spooner, Jared	Peru	R. D
Ward, J. O	Peru	R. D
Watkins, F. H	Peru	R. 10
Wilson, W. T.	Bunker Hill	R. D
Wareham, J. W	Gilead	R. D
Wilson, J. S	Macy	E. 3

Regular, 42; Eclectic, 7; Homœopathic, 4; Physio-Medical, 2; not reported, 6.

Monroe County.

Axtell, A. J.	Bloomington	R. 10
Bryan, G. W	Bloomington	R. D
Barrow. D. W.	Unionville	R. 3
Brannam, Jonathan	Bryant's Creek.	E. 10
Dodd, Jas.	Clear Creek.	R. D
Farr, A. C.	Bryant's Creek.	R. 3
Gaston, J. H	Bloomington	R. D
Harris, J. E.	Bloomington	R. D
Harris, R. C	Ellettsville	R. 10
Harris, J. J.	Ellettsville	R. 10
Harris, W. W.	Ellettsville	R. D
Hanson, Levi.	South Grange	R. 10
Humston, S. R	Smithville	R. 10
Judah, M. T	Gent	R. 3
Lowder, L. T	Harrodsburg	R. D
Maxwell, J. D., Sr	Bloomington	R. D
Maxwell, J. D., Jr	Bloomington	R. D
Munson, G. H	Stanford	R. D
McLaughlin, C. D	Harrodsburg	R. 10
Oliphant, P. T	Buena Vista	E. 3
Pressley, I. N.	Ellettsville	R. D
Rice, N. S.	South Union	E. D
Spencer, A. C.	Unionville	R. D
Simpson, J. D	Bloomington	R. D
Stansifer, G. J	Stinesville	R. D
Smith, J. T	Harrodsburg	R. 10
TOWSNER, J. P	Bloomington	R. 3
Weir, R. M	Bloomington	R. D
Whitted, W. L	Bloomington	R. D
Warring, J. M	Smithville	R. 10
Whitted, F. E	Ellettsville.	R. D

Regular, 28; Eclectic, 3.

Montgomery County.

Brown, Lonzo F	Alamo	R. D
Brown, Ira L	Alamo	R. D
Berryman, James L	Darlington	R. D
Black, Dayton R	New Richmond.	R. D
Burroughs, Wm. H.	Shannondale	R. D
Bobo, Cal. W	Clark's Hill	E. D
Bowers, Homer.	New Ross.	R. 3
Bronough, Chas. F	New Ross.	R. D
Ball, Zopher	Waveland	R. D
Bilbo, John W	Waveland	R. 3
Barnes, Dawson E	Crawfordsville	E. D
Cowan, Edward H	Crawfordsville	R. D
Chambers, Wm. B	Crawfordsville	H. D
Culver, Dudly M	Waynetown	R. D
Currie, John H	Darlington	R. 10
Claypool, Jos. S	Waynetown	R. 3
Detchon, Elliott	Crawfordsville	R. 3
Detchon, Irwin A	Crawfordsville	R. D
Detchon, Stow S	New Richmond.	R. 10
Deweis, Geo. W.	Crawfordsville	R. 3
Dingman, Jos. O	Linden	R. D
Duncan, Jos. R	Crawfordsville	E. D
Drake, Moses P.	Ladoga	R. D
Dunlavy, Ira P.	Waveland.	R. D
Davidson, Jesse W	Yountzville.	R. D
Eddingfield, Geo. W	Mace	R. D
Ensminger, Sam'l L	Crawfordsville	R. D
Ensminger, John A	Wingate	R. D
Etler, Jacob R	Crawfordsville	R. D
Gott, Wm. T	Crawfordsville	H. D
Griffith, Martha	Crawfordsville	R. D
Griffith, Thos. J.	Crawfordsville	R. D
Hutchings, Benj. F.	Crawfordsville	R. D
Henry, Abijah F	Wingate	R. D
Hoover, Mary.	Crawfordsville	N. R
Hillis, James D.	Darlington	R. D
Hurt, Wm. J	Waynetown	R. D
Hamilton, Albert N	Waynetown	R. D

Montgomery County—Continued.

Name.	Post Office.	School.	
Hyten, W. H	Parkersburg	R.	10
Irwin, Sam'l G	Crawfordsville	R.	D
Jones, Oliver H.	Crawfordsville	R.	D
Keegan, Enoch W	Crawfordsville	R.	D
Keeney, Henry	Linden	R.	10
Kleiser, Arthur J.	Waveland	R.	D
Kirkpatrick, Chas. S	Ladoga	R.	D
King, Richard F	New Ross	R.	D
Layne, Preston M	Crawfordsville	N.R.	10
Loflin, Wm. A	Linden	R.	D
May, Willis L.	Crawfordsville	R.	D
Morgan, Brastleton B.	Crawfordsville	R.	D
Mahorney, John C	Ladoga	H.	D
Matler, Thos. S	Waveland	E.	10
McMechan, Jas. G	Crawfordsville	R.	D
Naylor, Isaac E. S	Darlington	R.	10
Olin, L. W	Elmdale	R.	D
Olinger, David F	Brown's Valley	N.R.	3
Owsley, W. J	Darlington	R.	D
Odell, Jacob L	Kirkpatrick	E.	3
Purviance, Sam'l W	Crawfordsville	R.	D
Ristine, Warren H	Crawfordsville	R.	D
Russell, Jos. P	Waveland	R.	10
RANKIN, CHAS. E	Crawfordsville	R.	D
Rich, Fanny	Darlington	R.	3
Seller, Thos. P	Mace	R.	D
Straughn, John W	Parkersburg	R.	D
Straughn, Kent R	Brown's Valley	R.	D
Shannon, John S	Shannondale	R.	D
Shotts, Henry R	Linden	R.	D
Sutherlin, Jas. F	Ladoga	R.	D
Steele, Wm. W	Waveland	R.	D
Taylor, John N.	Crawfordsville	H.	D
Thornberry, John D	Crawfordsville	R.	10
Talbot, Jesse N.	Alamo	R.	D
Trembley, Daniel G	Mace	E.	D
Tucker, Geo. W.	Bowers	R.	3
Tilney, DeCaux	Crawfordsville	E.	D
Wilhite, Mary H	Crawfordsville	R.	D
Washburn, Elihu P.	Linden	R.	D
Washburn, M.	New Richmond	R.	10
Wilson, John B.	Ladoga	R.	D
Walden, Chas. H	New Market	R.	3
Williams, Geo. T	Brown's Valley	R.	D
William, Ira C	White's Valley	R.	D
Young, Dudley	New Market	R.	3

Regular, 70; Eclectic, 7; Homœopathic, 4; not reported, 3; total, 84.

Morgan County.

Name.	Post Office.	School.	
Blackstone, B. D.	Martinsville	R.	D
Banta, William C	Martinsville	R.	10
Bridges, A. P. W	Alaska	R.	3
Cure, H. W	Martinsville	R.	10
Farr, U. H	Martinsville	R.	D
Gravis, C. M	Martinsville	R.	D
Green, E. V.	Martinsville	R.	D
Green, Jas. L.	Morgantown	R.	D
Griffith, R. C	Morgantown	R.	D
Griggs, O. B	Brooklyn	R.	D
Harvey, D. B	Eminence	R.	D
Hendricks, W. E	Martinsville	R.	D
Henson, Theodore	Alaska	R.	D
Holiday, T. F.	Monrovia.	R.	D
Horton, Ellis	Monrovia.	R.	D
Johnson, Jarvis J	Martinsville	R.	D
Jones, H. C	Hall	R.	D
Kennedy, D. P	Martinsville	E.	D
Kennedy, John.	Paragon	E.	10
KESSINGER, C. A.	Martinsville	R.	D
Knight, J. H	Morgantown	R.	D
Leathers, D. A	Mooreville	R.	3
Lindley, C. M	Brooklyn	R.	D
Murphy, W. M	Morgantown	R.	D
Monical, G. S.	Brooklyn	R.	D
Miller, G. W	Martinsville	R.	10
McAlister, Alex	Alaska	R.	10
McDonald, D. H	Eminence	R.	D
Nichols, W. H	Eminence	R.	D
Pattorff, W. A	Eminence	R.	D
Perce, B. H	Mooresville	R.	D
Prather, W. E	Mahalasville	R.	10
Robinson, H. C	Martinsville	R.	D
Reagon, A. W	Mooresville.	R.	D
Rundell, S N	Cope	R.	D
Seaton, Charles.	Martinsville	R.	D
Seaton, G. W	Hall	R.	D
Shields, W. D.	Eminence	R.	D
Snoddy, J. W.	Mooresville	R.	D
Stucky, Thomas E	Mooresville	R.	D
Tilford, S. A	Martinsville	R.	D
Tilford, A. S	Hall	R.	D
Tarlon, R. H	Martinsville	R.	D
Tompson, T. L	Monrovia.	R.	D
Tompson, R. D	Eminence	R.	D
Vincent, J. K.	Waverly	R.	D
Van Sant, W. B	Lincoln.	R.	D
Whorton, J. O	Waverly	R.	D
Williamson, R. B.	Paragon	R.	D
Williams, K. H	Cope	R.	D
Wellons, S, E.	Martinsville	R.	D

Regular, 49; Eclectic, 2.

Newton County.

Name.	Post Office.	School.	
Allen, Ad.	Rose Lawn	R.	D
BECKNER, J. F.	Kentland	R.	D
Boice, R. B	Kentland.	R.	D
Caldwell, Samuel N	Pilot Grove.	H.	10
Chaffee, J. C. M	Kentland	H.	10
Farber, James H.	Brook	R.	D
Hatch, Jethro A	Kentland	R.	D
Humston, Milton N	Goodland.	R.	D
Hazel, John B	Goodland	P-M.	10
Lorett, John A	Goodland.	R.	D
Merry, J. W	Mt. Cline	R.	D
McCain, R. C	Kentland	R.	D
Pratt, B. W	Goodland.	R.	D
Pratt, L. Mrs.	Goodland.	R.	D
Ranstord, George	Lake Village	R.	D
Recker, L. H	Morocco	R.	D
Smith, G. B	Fernsman	R.	D
Triplitt, Charles E	Morocco	R.	D

Regular, 15; Physio-Medical, 1; Homœopathic, 2.

Noble County.

Name.	*Post Office.*	*School.*		*Name.*	*Post Office.*	*School.*	
Bowker, James J.	LaOtto	R.	D	Maloney, F. C	Avilla	R.	D
Buchtel Mary M	Ligonier	R.	10	Newton, Warren E.	Ligonier	H.	D
Bartley, R. W	Kendallville	E.	D	Niter, F. J	Brimfield	E.	D
Carr, Geo. W	Ligonier	R.	3	Olds, Wm. B	Kendallville	E.	D
Clark, Wm. H	Albion	R.	D	Ohlwine, E. C	Merriam	R.	D
DePew, E. W.	Wolf Lake	R.	10	Reiff, N. G	Albion	H.	D
Dunlap, Robert	Kendallville	R.	D	Reed, U. W	Wolf Lake	H.	D
Elio, C. J. F	Ligonier	H.	D	Shobe, W. A	Ligonier	R.	D
Forey, Benj. F	Wawaka	R.	D	Seymore, Calvin A	Wawaka	R.	D
Franks, W. H	Ligonier	R.	D	Schlotterback, E. L	Ligonier	R.	3
Gilbert, Joseph L	Kendallville	R.	D	Smith, Jacob F.	Rome City	R.	10
Gants, John	Cromwell	E.	D	Trader, James L	Avilla	R.	D
Green, Thomas C.	Albion	R.	D	Tucker, Henry G.	Cromwell	R.	10
Green, W. T	Albion	R.	D	Woodruff, Geo S	Ligonier	E.	10
Grant, Fernando A.	Ligonier	R.	D	Williams, Warren S	Kendallvile	R.	D
Hays, John H	Albion	R.	D	Williams, S. T	Kendallville	E.	D
Isbell, Philander	Kendallville	R.	10	Williams, Nathan	Kendallville	E.	10
Kester, Richard S	Kendallville	H.	D	Williams, Robert B	Rome City	R.	10
Knepper, Edwin W	Ligonier	R.	10	Williams, R. B., Jr	Rome City	R.	3
LEMMON, S. W	Albion	R.	D	Wilson, D. C	Kendallville	E.	D
Mitchell, Wm. L	Ligonier	R.	D	Wolf, Wm. R	Ligonier	N. R.	
Moore, Nathan B	Merriam	R.	3				

Regular, 29; Eclectic, 8; Homœopathic, 5; not reported, 2.

Ohio County.

Alden, T. E.	Rising Sun	R.	10	Miller, Jas. B.	Hartford	R.	10
Craig, Wm. H	Rising Sun	R.	10	Rockafellow, W. A	Guionsville.	R.	10
Elfers, John	Bear Branch	R.	D	Stevenson, Geo. A	Rising Sun	R.	D
Ford, O. P. M.	Hartford	R.	D	Sullivan, W. H	Rising Sun	R.	D
Gillespie, Wm	Rising Sun	R.	10	Wilson, N. H	Guionsville	R.	10
LANGSDALE, R. G	Rising Sun	R.	D				

Regular, 11.

Orange County.

Bowles, L. S.	Paoli	R.	10	Mayfield, B.	Young's Creek	R.	D
Brent, Wm	Newton Stewart.	R.	D	May, Geo. W	Orleans	R.	D
Boyd, C. L	Bromer	R.	D	MONTGOMERY, J. W	Paoli	R.	D
Carter, G. P.	Orangeville.	R.	D	Ryan, Samuel	French Lick	R.	3
Ellis, Wm. D	Young's Creek	R.	10	Ryan, Wm	French Lick	R.	D
Gilliatt, Wm. B.	Young's Creek	R.	D	Ritter, J. A., Jr.	West Baden	R.	D
Hackney, W. R.	Orleans	R.	10	Ritter, J. A., Sr.	Orangeville.	R.	3
How, B. J.	Orleans	R.	D	Ritter, T. B	Orangeville.	R.	3
How, W. H	Paoli	R.	D	Smith, E. H.	Newton Stewart	R.	3
Hazlewood, Green	Chambersburg	R.	D	Smith, J. H	Valeene.	R.	3
Hunt, F. P	Leipsic	R.	3	Sherrod, J. H.	Paoli	R.	3
Kochenour, Wm. P.	Rego	R.	D	Sherrod, W. F	West Baden	R.	3
Laughlin, E. D.	Orleans	R.	D	Strand, S. D	Valeene	R.	10
Lingle, R. W	Orleans	R.	D	Patton, Chas	Valeene	R.	D
Lindley, Luben.	Paoli	R.	D				

Regular, 29.

Owen County.

Coble, Jacob	Spencer	E.	D	McDonald, David H	Quincy	R.	D
Erskine, A. C.	Hausertown	R.	D	McKelvey, S. R	Patricksburg	R.	D
Fisher, B. T.	Spencer.	R.	D	McCabe, H. H.	Coal City	R.	10
Fryar, Lydia	Vandalia		10	Osgood, H. G	Gosport.	E.	D
Gray, O. F	White Hall	R.	D	Pierson, Allen	Spencer	R.	D
Gray, Geo. B	White Hall	R.	D	Preston, Joseph L	Cloverdale	R.	D
Gantz, Thos	Freedom	R.	10	Ritter, C. D	Gosport.	R.	D
Gilbert, Wm. H.	White Hall	R.	10	Richards, S. D.	Patricksburg	R.	10
Hixon, Wm. H	White Hall	E.	10	Rice, W. H	Cuba	R.	D
Hamilton, J. W.	Coal City	R	D	Stucky, John M	Gosport.	R.	D
Hester, U. A. V.	Arney.		10	Stucky, Fred V.	Gosport	R.	D
Jones, Jesse M	Cataract	R.	10	Smith, John W	Gosport.	R.	D
Kennedy, John	Gosport	R.	10	Schell, F. A.	Spencer	E.	D
Keifer, Geo. F	Quincy	R.	D	WILES, WILLIAM V	Spencer.	R.	D
Livingston, J. J	White Hall	E	D	Williams, John A	Patricksburg.	R.	10
Minnick, A. Z	Freedom	R.	10	Wooden, J.	Gosport.	R.	10
Medaris, Stephen D	Jordan Village.	E.	10	Young, William S	Coal City	R.	D

Regular, 26; Eclectic, 6; not reported, 2.

Parke County.

Name.	*Post Office.*	*School.*	
Alvord, H.	Rockville.	H.	D
Ball, J. F.	Judson	R.	D
Baldridge, R. A	Roseville	R.	D
Boyd, J. M	Bloomingdale.	R.	D
Cross, J. F	Rockville.	R.	D
Caplinger, C. A.	Marshall	R.	3
Crooks, J	Bridgeton.	E.	D
Campbell, Annie B.	Rockville.		
Darroch, W. P	Hollandsburg.	R.	D
Daly, G. P	Rockville.	R.	D
Dare, J. S.	Bloomingdale.	R.	10
Dooly, R. L.	Mecca Mills	R.	3
Goldsberry, J. A	Annapolis.	R.	D
Gillum, W. H.	Rockville.	R.	D
Garrigus, J. J.	Sylvania	R.	3
GOSS, M	Rockville.	R.	D
Holmes, W. B.	Lodi.	R.	10
Hansell, D	Lena	R.	10
Hudson, B. F.	Montezuma.	R.	D
Johnston, M. A.	Roseville	R.	D
Larue, B. F.	Portland Mills	R.	D
Lynch, J. Y.	Rosedale	R.	D
Leech, T. F.	Judson	R.	D
McKay, R. H	Russell Mills	R.	10
Morris, C. C.	Rockville.	R.	D
Mater, J. S	Bridgeton.	R.	D
McCune, G. W	Montezuma.	R.	D
Martin, A.	Bellmore	R.	D
Morris. A. W	Coloma	R.	D
Myers, J. C. L	Bloomingdale.	R	D
Norman, J. F.	Parkeville	R.	D
Powell. B. B	Marshall	E.	D
Rice, H. J.	Rockville.	R.	D
Reeder, J. C	Montezuma.	E.	D
Thomas, W. L	Rockville.	R.	D
Vancleve, E.	Catlin.	R.	3
Webster, Ellen	Bridgeton	P.-M.	D
Williamson, W. N	Sylvania	R.	D
Woody, G. C	Annapolis.		10
Williamson, A	Sylvania	R.	3

Regular, 32; Homœopathic, 1; Eclectic, 4; Physio-Medical, 1; not reported, 2.

Perry County.

Adye, Andrew J	Adyeville.	R.	10
BRUCKER, CHAS. M.	Tell City	E.	D
Bacon, J. D.	Troy	R.	10
Bennett, James B.	Derby.	R.	3
Brown, G. W	Doolittle's Mills	R.	10
Cluthe, William	Tell City	R.	D
Carnavan, J. W.	St. Croix	R.	3
Cox, C. E	Cannelton	R.	10
Critchfield, John S	Foster's Ridge	R.	D
Curry, H. M	Cannelton	R.	D
Dome, D. C	Troy	R.	10
Evans, F. A	Tell City	E.	10
Foster, J. C.	Foster's Ridge	E.	D
Foster, A. E.	Foster's Ridge	R.	D
Hendrixon, A. M. D	Rono	R.	D
Hix, W. R.	Don Juan.	R.	10
Howard, W. R	Lilydale	R.	10
Lang, J. W	Lilydale	R.	10
Ladd, C. W	Cannelton	R.	D
Lee, J. H	Rome	R.	D
Lomax, Wm	Bristow.	R.	D
Mitchell, F. A	Cannelton	R.	D
Meeks, Lewis.	Branchville	E.	D
Ripperdan, John H.	Rono	R.	10
Schellhase, F. W	Tell City	H.	D
VanWinkle, Sylvester	German Ridge	R.	10
Wedding, M. F.	Rome	R.	D
Webb, J. R	Troy	E.	3
Venneman, R. T	Troy	R.	D

Regular, 23; Eclectic, 5; Homœopathic, 1.

Pike County.

Adams, J. R	Petersburgh	R.	D
Basinger, Thos. W	Oatsville	R.	D
Basinger, John H	Oatsville	R.	D
Beardsley, J. M	Winslow	R.	D
Bethell, Wm. J	Winslow	R.	10
Bergen, J. W	Petersburgh	R.	D
Blythe, W. T	Glezen	R.	3
BYERS, A. R	Petersburgh	R.	D
Corn, Nathaniel	Augusta	R.	D
Coleman, J. W	Union	R.	D
Duncan, J. B.	Petersburgh	R.	D
DeMott, Wm	Algiers	R.	D
DeTar, David	Winslow	R.	D
Ferguson, Jas. W	Pikeville	R.	10
Ferguson, Thomas	Spurgeon	R.	10
Fullenwider, C. H	Petersburgh	R.	D
Godwin, John W.	Otwell	H.	10
Hawkins, John	Petersburgh	R.	D
Harrington. Andrew	Velpen	R.	10
Harris, R. W	Algiers	R.	D
Hilsmeyer, Louis H	Stendal	R.	D
Holloway, W. E	Petersburgh	H.	10
Ireland, G. L	Winslow	R.	D
Johnson. L. B	Otwell	R.	D
Kepley, Wm	Petersburgh	E.	10
Kime, R. R	Petersburgh	R.	D
Kime, Thomas J	Union	R.	D
Lance. J. T	Spurgeon	R.	D
Lamar. I. H	Petersburgh	E.	D
Link, Wm. H	Otwell	R.	D
Osborn, Wm. R	Spurgeon	R.	D
Pagin, Henry	Velpen	E.	D
Rhoads, A. J	Pikeville	R.	10
Russell, W. H	Petersburgh	R.	D
Schenck, H. F	Oatsville	R.	D
Smith, John T	Glezen	R.	10
Stork, John H	Stendal	R.	D
Taylor, James N	Velpen	E.	10
Thomas, M. C	Petersburgh	H.	10
Turner, Martin V	Winslow		10
Ward. John P	Union	R.	D
Woodward, L. E	Winslow	R.	D

Regular, 34; Eclectic, 4; Homœopathic, 2; not reported, 1.

Porter County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Arnold, Geo. W.	Wheeler	R. D	Kellogg, Chas.	Chesterton	E. D
Atkins, Lymon	Kout	E. D	Loring, D. J	Valparaiso	R. D
Anderson, Elsie F	Valparaiso	R. D	Letherman, S. P	Valparaiso	R. D
Blackston, John K	Hebron	R. D	McCarthy, John F	Valparaiso	R. D
Blackston, Jno K., Jr	Hebron	R. D	Noland, Philip D.	Kout	R. D
Blackston, Wm. B	Hebron	R. D	Oakes, Omar	Wheeler	R. D
Beer, Henry M	Valparaiso	R. D	Palmer, T. W	Valparaiso	H. D
Carey, E. A.	Chesterton	R. D	Pratt, Samuel R	Hebron	R. D
Coates, H. C	Valparaiso	R. D	Pagin, Samuel	Valparaiso	E. D
Edmunds, Enos A	Hebron	H. D	Ryan, John A	Valparaiso	E. D
Elliott, H. G	Valparaiso	H. D	Sayles, Marshall F	Valparaiso	H. 10
Green, Hiram.	Chesterton	R. 10	Vincent, Alonzo W.	Valparaiso	E. D
Haynes, Celia M	Valparaiso	H. D	Wood, Oliver S	Hebron	E. D
Hubbard, R. B	Hebron	E. D	Willing, S. J	Wheeler	R. D
Jones, E. J	Hageman	R. 10	YOHN, WM. A	Valparaiso	R. D

Regular, 18; Eclectic, 7; Homœopathic, 5.

Posey County.

Allen, Leroy R	Cynthiana	E. 3	Millard, Z. R	Griffin	R. D
Brydon, John F	Griffin	R. 3	Murphy, Edward.	New Harmony	R. D
Bucklin, Geo. W	New Harmony	R. D	Neal, Daniel	New Harmony	R. 10
Bitz, L. B	Blairsville	R. D	Neal, Benjamin	New Harmony	R. D
Carey, W. P.	Hovey	R. 3	Phar, W. L	Griffin	R. D
Casby, L. B	Cynthiana	R. 3	Pearse, S. H	Mt. Vernon.	R. D
Cremeens, W. C	Grafton.	E. D	Peckinpaugh, G. R.	Mt. Vernon.	R. D
Dailey, T. J.	Poseyville	R. 10	Powell, J. W	Mt. Vernon.	R. 3
Dentsdorff, H. B	Parker's Set'mt	R. 10	Rawlings, S. O	New Harmony	R. D
Dixon, R. S.	Mt. Vernon.	H. 10	Rutledge, J. C	Poseyville	R. 10
Elliott, Cyrenius, Sr	Poseyville	R. 10	Rutter, John	Cynthiana	E. D
Elliott, Cyrenius, Jr	Blairsville	R. 3	RAMSEY, D. C	Mt. Vernon.	R. D
Gudgel, James E	Cynthiana	R. D	Schultz, O. T	Mt. Vernon.	R. D
Gaumon, D. A	Solitude	R. D	Spencer, E. V	Mt. Vernon.	R. D
Glaze, L. A	Poseyville	R. D	Smyth, R	Mt. Vernon.	R. D
Glaze, J. M	New Harmony	R. D	Seitz, W. R	West Franklin	R. D
Gettings, C. C.	Grafton.	R. 10	Smith, W. F	Cynthiana	E. D
Goodwin, E. J	Mt. Vernon.	R. D	Williams, Jos. B	Grafton.	R. 3
Holton, W. M.	New Harmony	R. D	Williams, Thos. F	St. Wendel	E. D
Hicks, C	Caborn's	R. D	Wilson, Thos. W	New Harmony	R. D
Huston, J. C	Mt. Vernon.	R. D	Wilson, P. D	Mt. Vernon.	R. 10
Harper, John	Mt. Vernon.	R. D	Wilson, John B.	Stewartsville	R. D
Hensler, Ernest	West Franklin	R. 3	Welborn, Geo. W	Stewartsville.	R. D
Henderson, S. C	St. Philip.	R. D	Welch, Walter	Mt. Vernon.	R. D
Krausgrill, David	Wadesville	R. D	Young, Thos. B	Poseyville	R. D

Regular, 43; Eclectic, 5; Homœopathic, 1.

Pulaski County.

Brown, Stephen	Francesville	R. D	Peters, R. J. D	Star City	R. 10
Buck, Felix G	Oak.	R. D	Stephens Henry C	Star City	R. P. M
Jones, H. G.	Medaryville	R. D	Sharrer, John C	Francesville	R. D
Kelsey, Wm	Monterey.	R. D	Thomas, F. B.	Winamac.	R. 10
McPherson, Robert.	Pulaski.	R. D	THOMAS, J. J	Winamac.	R. 10
Moss, D. F	Winamac.	R. D	Thompson, W. H	Winamac.	R. D
Osborn, James	Star City	R. D	Thompson, G. W	Winamac.	R. D
Pattison, H. E	Winamac.	R. D	Vaughn, Martin	Pulaski.	R. 3
Pugh, John W	Lakeside	P. M			

Regular, 16; Physio-Medical. 1.

Putnam County.

Name.	*Fost Office.*	*School.*	
Allen, Chas. A	NewMaysville	R	3
BENCE, GEO. W	Greencastle	R.	D
Bastian, J. V	Belle Union	R.	D
Cully, J. F	Bainbridge	R.	D
DeVore, H. V	Greencastle	R.	D
Denny, R. B	Fillmore	R.	10
Dooly, R. L	Russellville	R.	3
Evans, E. B	Greencastle	R.	D
Farver, Geo. W	Bainbridge	R.	D
Fulton, R. E	Greencastle	R.	10
Goodwin, D. H		R.	10
Hanna, L. M	Greencastle	R.	D
Harris, W. C	Carpentersville	R.	D
Hill W. D	Greencastle	H.	10
Horn, A. H	Putnamville	R.	D
Hawkins, E	Greencastle	R.	D
Hamilton, R. S.	Portland Mills	R.	10
Harvey, J. W	Russellville	R.	10
Jacks, J. R	Manhattan	E.	D
Knight, J. M	Greencastle	E.	D
Kneale, W. W	Groveland	R.	D
Leatherman, J. R	Greencastle	R.	D
LaRue, B. F	Portland Mills	R.	D
Mullinix, P	Cloverdale	R.	3
Moore, A. H	Clinton Falls	R.	D
Mahorney, J. W	Belle Union	R.	D
McCandlers, A. S.	Roachdale	R.	D
Newgent, R. P	Clinton Falls	R.	10
Prichard, W. K	Cloverdale	R.	D
Preston, J. L	Cloverdale	R.	D
Purcell, W. M	Reesville	R.	D
Poole, Geo. W	Russellville	R	D
Price, E. O	Groveland	R.	D
Robinson, J. H	Coatsville	R.	D
Rogers, H. C	Barnard	R.	D
Rogers, Dudley	Greencastle	R.	D
Smythe, G. C	Greencastle	R.	D
Stanley L	Fincastle	R.	D
Slavens, John	Brick Chapel	R.	D
Spurgeon, B. F	Mt. Meridian	R.	D
Smith, N. G	Greencastle	E.	D
Taylor, Mary J	Greencastle	H.	D
Taylor, Geo. W.	Greencastle	H.	10
Towey, J. T	Russellville	R.	D
Terrell, W. H	Fillmore	R.	D
Wood, N. S	Roachdale	R.	D
Zaring, C. T	Reelsville	R.	D

Regular, 41; Eclectic, 3; Homœopathic, 3.

Randolph County.

Alexander, R. P	Winchester	P. M.	D
Alexander, Prudence.	Winchester	P. M.	10
Bailey, Elisha T	Ridgeville	R.	D
Ballard, Amos B	Deerfield	R.	D
Berry, John S.	Spartansburg.	R.	D
Blair, James S	Lynn	R.	D
Bosworth, Richard	Winchester	R.	D
Botkin, John W	Unionsport	E.	10
Botkin, Thomas W	Unionsport	E.	3
Carter, David M	Modoc.	R.	D
Cox, Cyrus	Lynn	R.	D
Carver, James M	Winchester	R.	10
Chenoweth, J. T	Winchester	R.	D
Chenoweth, Forest A.	Winchester	R.	D
Chenoweth, Nelson T.	Windsor	R.	D
Commons, Wm	Union City	R.	D
Coggshall, Wm. R	Carlos City	E.	10
Davis, Lewis N.	Farmland.	R.	D
Evans, C. S	Union City	R.	D
Evans, Geo. S.	Saratoga	R.	10
Evans, Joseph J	Winchester	R.	10
Farquhar, Allen H	Ridgeville	E.	D
Fager, C. M.	Fairview	R.	10
Franks, H. P	Losantville	R.	D
Frederick, Geo. W	Ridgeville	R.	D
Frazier, John W	Union City	P. M.	10
Gustin, Francis M	Union City	H.	D
Huddleston, A. F.	Winchester	H.	D
Heiner, John	Arba	R.	D
Hetzler, Wm. W	Arba	R.	D
Hunt, Henry C	Trenton.	R.	3
Hunt, Pleasant	Farmland	E.	10
Hiatt, John A	Ridgeville	E.	D
Hiatt, C. C	Ridgeville	E.	D
Hamilton, R	Lynn	R.	10
Johnson, Harvey B.	Ridgeville	R.	D
King, James H	Castle.	R.	10
Kuner, James M	Farmland	R.	10
Lawrence, M. H	Union City	R.	D
MARKLE, JOHN E	Winchester	R.	D
Mote, Elijah V	Union City	E.	D
Marquis, Wm. K	Bartonia	E.	10
Martin, J. Chas.	Union City	B.	D
Moroney, James H	Carlos City	R.	D
McFarland, Norman	New Pittsburg	E.	10
Nixon, John	Farmland.	R.	D
Owens, John R	Harrisville	R.	3
Purcell, John.	Deerfield	R.	D
Procter, J. A	Union City	P.M.	10
Rogers, Aaron G	Parker	R.	D
Reynard, Granville	Union City	R.	D
Ruby, Samuel B	Union City	R.	3
Reeves, John L.	Union City	E.	D
Rickard, Wm. A	New Pittsburg	E.	D
Rickard, Claudia A	New Pittsburg	E.	D
Remmel, Sylvania	Winchester	P.M.	10
Smith, Wm. G	Winchester	R.	D
Smith, Calvin.	Farmland.	E.	D
Shoemaker, Wm. J	Ridgeville	R.	10
Thompson, Geo. W.	Union City	E.	D
Thompson, Val.	Union City	E.	10
Tisor, Wm. R.	Rural	R.	10
Welbourne, E. L	Union City	E.	D
White, James K	Union City	R.	D
White, L. E.	Arba	P.M.	D
Yergin, H. H	Union City	R.	D

Regular, 41; Physio-Medical, 6; Eclectic, 17; Homœopathic, 2.

Ripley County.

Name.	*Post Office.*	*School.*	
Abbott, Mano	Milan	E.	D
Abbott, June	Milan	E.	D
Anderson, James	Versailles	R.	D
Brown, Charles M	New Marion	R.	D
Clark, Freeman	Delaware	R.	D
Cass, Chester H	Holton	R.	L
Davis, James R	Morris	R.	D
Edsell, H. P	Morris	R.	D
Freeman, Edward D	Osgood	R.	D
Freeland, John P	Sunman	R.	D
Hicks, John B	Napoleon	P.-M.	D
Hobbert, William H	Elrod	R.	D
Hess, John N	New Marion	R.	D
Jones, John G	Versailles	R.	D
Joseph, Alexander F	Osgood	R.	D
Lamb, James F	Delaware	E.	D
Miller, Robert H	Cross Plains	R.	D
Miller, Albert G	Elrod	E.	D
Newforth, Christian	Sunman	R.	D
Olmstead, Russell T	Versailles	R.	D
Parsons, George E	Milan	E.	D
ROBINSON, JNO. W	Versailles	R.	D
Roberts, Jeremiah	Holton	R.	3
Redbon, Daniel M	Pierceville	R.	3
Ratcliff, J. F	Morris	R.	D
Sweezeg, John M	Cross Plains	E.	10
Schloesser, Geo. F	Batesville	R.	10
Sweezeg, Frank C	Cross Plains	E.	D
Townsend, Samuel B	Osgood	R.	D
Vincent, Edwin B	Sunman	R.	D
Wells, Henry O	Milan	R.	D
Young, Robert W	Milan	R.	10
Zitche, Joseph	Batesville	R.	D

Regular, 24; Eclectic, 7.

Rush County.

Axiline, J. A	Raleigh	R.	D
Arnold, John	Rushville	R.	D
Beher, E. D	Rushville	E.	D
Barnum, Wm. E	Manilla	R.	D
Bogart, H. J	Carthage	R.	10
Crippen, E. H	Milroy	R.	10
Dillon, J. C	Knightstown	R.	D
Drake, F. J	Carthage	R.	D
Elliott, H. H	Glenwood	E.	3
Gilbert, C. H	Rushville	H.	D
Green, J. C	Arlington	R.	D
Green, Lot	Rushville	R.	D
Glass, F. J	Arlington	R.	3
Hackleman, F. G	Rushville	R.	D
Hargrove, W. S	New Salem	R.	D
Hobbs, O, W	Mays	R.	D
Inlow, John J	Manilla	R.	10
Johnston, Wm	Falmouth	E.	D
Linn, H. G	Rushville	H.	D
Louden, L. A	Manilla	R.	D
Moffett, John	Rushville	R.	D
Megee, W. N	Rushville	R.	D
Megee, Omer	Rushville	R.	D
McGaughey, John E	Arlington	R.	D
McMahan, S. W	Rushville	R.	D
Newlin, S. C	New Salem	R.	D
Orr, James P	Glenwood	R.	D
Pugh, Wm. A	Rushville	R.	D
Parsons, Chas. H	Rushville	R.	D
Ross, L. G	Raleigh	R.	10
Rucker, Thos	Arlington	E.	10
Sexton, Marshall	Rushville	R.	D
Sexton, John C	Rushville	R.	D
Smith, Wm. H	Rushville	R.	D
Sparks, James B	Carthage	R.	D
SPURRIER, J. H	Rushville	R.	D
Salisbery, Samuel	Milroy	E.	10
Smullen, Chas. L	Groves	R.	D
Tevis, J. L	Moscow	R.	10
Thomas, S. C	Milroy	R.	D
Welliver, J. E	Rushville	H.	D
Wright, George	Sexton	P.-M.	D
Wooden, E. D	Horner	R.	D

Regular, 34; Physio-Medical, 1; Homœopathic, 3; Eclectic, 3.

Scott County.

Bierey, T. E	Scottsburgh	R.	D
Blotcher, J. B	Blotcher	R.	D
Carey, H. R.	Austin	R.	D
Davis, Wm. H	Lexington	R.	10
Green, W. E	Lexington	E.	10
Hougland, M. E. M.	Vienna	R.	10
Isham, John H	Scottsburgh	R.	D
Lathrop, A. H	Lexington	R.	D
Moser, J. S	Vienna	R.	10
Sarver, J. A.	New Frankfort	R.	D
Warmoth, G. M.	Scottsburgh	R.	D
WATSON, J. M.	Scottsburgh	R.	D

Regular, 11; Eclectic, 1.

Shelby County.

Name.	*Post Office.*	*School.*
Adams, James M	Noah	R. D
Black, F. B	Bengal	E. D
Bowlby, Joseph	Noah	R. D
Bawler, W. K	Waldron	E. D
Bentley, W. R	Morristown	H. D
Connelly, Henry M.	Flat Rock	R. D
Coleman, Emma	Winterrowd	E. D
Carter, James	Gwynneville	R. 3
Drake, I. H	Shelbyville	R. D
Drake, Morris	Shelbyville	R. D
Flemming, Geo. W	Shelbyville	R. D
Ford, W. M	Mt. Auburn	R. D
Floyd, R. M.	Shelbyville	R. 10
Gilmore, Moses R.	Boggstown	R. D
Green, James W	Shelbyville	R. D
Green, Thomas G	Shelbyville	R. D
Green, Will F.	Freeport	R. D
Inlow, I. W.	Blue Ridge	R. 10
Jenkins, J. R	Waldron	R. D
Jones, Thomas S	Shelbyville	R. D
Keeling, William W	Sulphur Hill	E. D
Knapp, W. T	Shelbyville	H. D
Kennedy, Samuel A	Shelbyville	R. D
Kennedy, Thomas C	Shelbyville	R. D
Lowden, John	Carrolton	E. D
Lucas, J. N.	Shelbyville	H. D
Leech, E. W	Shelbyville	R. 10
Maddox, J. F	Shelbyville	E. D
McCray, Robert S	Morristown	R. D
McFadden, Wm. G	Shelbyville	R. D
Pierson, Wm. M	Fountaintown	R. D
Perry, John	Shelbyville	R. D
Parish, John W.	Shelbyville	E. D
Pettigrew, D. A.	Flat Rock	R. D
Posz, Margaret	Shelbyville	10
Rubush, Thomas R.	London	R. D
Raynes, R. D.	Lewis Creek	R. 10
Rucker, Jesse, W.	Shelbyville	R. D
Strickler Stephen L	Boggstown	R. D
Snider, John W.	Fairland	R. D
Stuart, J. K.	Fairland	R. D
Smith, Hezekiah	Fairland	10
Stewart, John B	Marietta	R. 10
Sanford, James H	Shelbyville	R. 3
Shrout, William T	Blue Ridge	E. 10
TREES, IRVIN W.	Smithland	R. D
Taylor, John F.	Sulphur Hill	R. D
Tindall, Charles A	Shelbyville	E. D
Washburn, R. R	Waldron	R. D
Wolf, Jacob G	Morristown	R. D
Winters, Gustav G	Shelbyville	H. 10
Whetzel, Frank F	Morristown	R. D
Wells, Edward F	Shelbyville	R. D

Regular, 38; Homœopathic, 4; Eclectic, 9; not reported, 2.

Spencer County.

Adye, George F	Newtonville	R. D
Anderson, E. M	Huff	R. D
Austin, Thomas R	Chrisney	E. D
Allenbaugh, E. E	Hatfield	R. D
Bean, Albert M.	Gentryville	E. D
Bryant, James B	Gentryville	R. D
Bryant, James H	Gentryville	R. 10
Bryant, W. S	Dale	R. D
Billart, F. W	Chrisney	R. 10
Butler, James M	Troy, Perry Co	E. D
Buxton, John L	Rockport	E. D
Dailey, James M	Rockport	R. D
Dyer, Abraham S.	Huffman	N. R. 10
Ehrman, E. D	Rockport	H. 3
Gatewood, T. H	Midway	R. D
Gengelbach, E. E	St. Meinrad	E. D
Hackleman, F. M	Rockport	E. D
Harrison, E. P	Patronville	N. R. 10
Hammond, D. M	Grandview	R. D
Hunter, S. W.	Chrisney	R. 3
Hutchinson, R. H	Gentryville	R. D
James, John B	Buffaloville	E. 10
Jolly, J. C	Lake	R. D
Johnson, Thomas J.	Dale	R. D
John, B. B	Newtonville	E. 10
Jones, Wm. M	Gentryville	R. D
Killian, J. L	Eureka	R. 10
Logsdon, Wm. T	Eureka	R. D
Lucas, L. B.	Buffaloville	E. D
Littlepage, S. B	Rockport	R. D
Lee, Hardin A	Liberal	R. D
Lang, Jacob	Lake	H. D
Lamar, M. L	Eureka	H. D
Milner, Isaac L.	Rockport	R. D
Medcalf, A. F.	Dale	R. 10
Myler, John M	Eureka	R.
Maslowsky, Felix	Maria Hill	R. D
McCoy, L. H	Lake	R. D
McCOY, GEO. W.	Chrisney	R. D
McKasson, John W.	Gentryville	R. 10
Schweizer, John J	Santa Claus	R. 3
Smith, John R	Chrisney	E. D
Turpin, James	Rockport	E. D
Wright, Thomas	Midway	R. D
White, John T	Grandview	R. 3
Williams, Wm. H	Dale	E. D

Regular, 29; Eclectic, 12; Homeopathic, 3; not reported, 2.

Starke County.

Agnew, Thos. J.	San Pierre	R. D
Abner, J. R.	Grovertown	P.-M. D
BONAR, S. S	Knox	R. 10
Burson, Amos J	Hamlet	E. 10
Coffin, Ellen	Hamlet	E. 10
Garner, Henry	Knox	E. 10
Glazebrook, L. D	Knox	R. 10
Henderson, Alex. H	Knox	E. 10
Hunt, Z. P	Ora	E. 10
Nolan, J. F	North Judson	R. D
Riggle, G. W	North Judson	E. 10
Stuckman, Martin	Ora	R. 10
Wright, M. R.	Knox	E. 10
Watson, J. C	Knox	R. D

Regular, 6; Eclectic, 6; Physio-Medical, 1.

Steuben County.

Abbott, Lyman	Fremont	R. D
Brown, David N. E.	Hamilton	E. 10
Cameron, J. F	Hamilton	R. D
Clay, M. F	Salem Center	E. D
Dolph, C. M.	Pleasant Lake	R. D
Fuller, S. H.	Pleasant Lake	R. D
Goodall, Chas. W.	Metz	R. D
Griffin, D. B	Angola	N. R. 10
Hamilton, Frank	Hudson	R. D
Helms, A. M	Orland	P.-M. D
Keesler, George	Orland	R. 10
Leas, E. R	Angola	H. 10

Steuben County—Continued.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Moore, J. H.	Angola	E. 10	Vimsey, J. C	Salem Center.	N. R. 10
McNabb, Theo. B.	Fremont	R. D	Vinsimel, I. J	Hudson.	R. N. R
Pickett, C. M	Angola.	H. N. R	Waller, W. H.	Angola	R. D
Ransbury, M N	Salem Center.	R. D	WOOD, H. D	Angola	R. D
Stooper, E. R.	Fremont	R. D	Williams, F. B	Angola	R. D
Shaw, M. F	Angola	R. D	Wallace, J. F.	Orland	R. D
Linch, P. H. S	Crooked Creek	R. D	Wood, J. F	Metz	R. D
Lane, W. H.	Angola	R. D			

Regular, 19; Eclectic, 3; Homeopathic, 2; Physio-Medical, 1; not reported, 2.

St. Joseph County.

Applegate, Chas. H.	South Bend	R. D	Mauer, John	South Bend	E. 10
Arlington, Jas. W.	Walkerton	R. D	Miller, Martin	South Bend	H. D
Borough, John	Mishawaka	H. D	McDonald, Thos. T.	New Carlisle	R. 10
Brown, Jacob R.	South Bend	R. 10	Massey, T. F	New Carlisle	E. D
Berteling, John B.	South Bend	R. D	Miller, Allen G.	South Bend	R. 3
Campbell, Alex. S.	North Liberty	E. 10	Merritt, Alanson B.	South Bend	R. D
Cassidy, John	South Bend	R. D	McGill, John A.	South Bend	H. D
Carpenter, Geo. W	South Bend	E. D	McAllister, Elbert W.	South Bend	R. D
Church, Isaac W	Walkerton	E. D	McCool, Amos W.	Walkerton	R. 10
Chaffee, Walter D	South Bend	H. D	McGill, Jas. P.	South Bend	H. D
Dunning, L. H	South Bend	R. D	Norton, Daniel H.	South Bend	R. 10
Daugherty, Chas. A.	South Bend	R. D	O'Connor, Jas	North Liberty	R. 10
Drollinger, E. M	South Bend	E. D	Osborn, Geo. A	South Bend	R. D
Danis, Jeremiah H	New Carlisle	R. D	Osborn, Margaret	South Bend	R. 10
Dayton, Daniel	South Bend	R. D	Pierce, Wm. A	Osceola	R. 3
Endley, Jas. F	Walkerton	E. D	Partridge, Joel M.	South Bend	H. D
Eliel, Leopold	South Bend	R. 10	Rupp, P E	South Bend	E. 3
Fast, Emmet E.	Lakeville	R. D	Reece, Jas. N.	North Liberty	R. D
Fink, Henry A	Mishawaka.	R. D	Richmond, Chas. M.	Walkerton	R. D
Green, Jas. B	Mishawaka	R. 10	Sawyer, F. M	South Bend	R. D
Grimer, Jas. F	Mishawaka	E. D	Sack, John C	South Bend	R. D
Grimer, John H	Mishawaka	E. D	Stockwell, Sarah F.	South Bend	R. D
Grime, Henry Y.	Mill Creek	R. D	Shaeffer, Geo. J.	North Liberty	R. 10
Huntsinger, A	Mishawaka.	E. D	Schafer, Albert T.	South Bend	R. D
Harris, Robert	South Bend	E. 10	Thorp, Baron C.	Mishawaka	R. D
Harris, Joel	New Carlisle	R. 10	Ulery, S. H	South Bend	— —
Hanford, Wm. H	South Bend	H. D	Ulery, Arthur O.	South Bend	H. D
HILL, J. WILLIS	South Bend	R. D	Varier, Jas. A.	North Liberty	R. D
Kilmer, Sam'l L	South Bend	R. D	VanPelt, Ryan T.	Mishawka	E. D
Loring, Sam'l C.	Walkerton	R. D	VanRyper, A. N	New Carlisle	E. D
Myers, Cornelius H.	South Bend	H. D	Wickham, W. A. R,	South Bend	E. D
Montgomery, H. T	South Bend	R. D	Woodworth, H. A.	Walkerton	R. 3
Moore, John	Lakeville	R. 10	Wagner, Albert L.	South Bend	R. D
Moore, Robert	Lakeville	R. 10			

Regular, 46; Eclectic, 14; Homeopathic, 9.

Sullivan County.

Bennett, J. H.	Farmersburgh	E. D	Lowder, C. M.	Dugger	R. D
Briggs, C. F.	Sullivan	R. D	Mason, T. A	New Lebanon	R. D
Brown, N. S	Dugger	R. 10	Mathews, J. M	Carlisle.	R. D
Buskirk, J. S	Shelburn	R. 10	Mayfield, T. B	Pleasantville.	R. D
Crowder, R. H	Sullivan	R. D	McKirsick, Olwin.	Dugger	R. D
Crowley, J. B.	Sullivan	E. D	Murphy, J. S	Dugger	R. 3
Cushman, A	Granville.	R. D	Nebergall, J. W	Burchard	R. 10
Davis, N. B.	Ruiston.	R. D	Osburn, S. D	Shelburn	R. D
Delashmut, V. E	Shelburn	R. D	Phillips, J. L.	Dugger	R. 3
Denison, E. D	Carlisle.	R. 10	Plew, G. F	Hymera.	R. D
Durham, J. L.	Graysville	R. D	Sanders, J. F	Sullivan	R. 3
FREEMAN, JOS.	Sullivan	R. D	Stone, W. O.	Fairbanks	R. D
Fleming, W. A	Pleasantville.	R. 3	Thompson, J. J.	Sullivan	R. 3
Harper, H. F	Merom	R. D	Thompson, W. N	Sullivan	R. D
Harper, J. B	Shelburn	R. 10	Thralls. R. T	Hymera	R. D
Higbee, G. W	Sullivan	H. D	Treoxell, S. D	Paxton	R. D
Higbee, J. L	Sullivan	H. D	Vancleve, R. H.	Farmersburgh	R. D
Jenkins, R. L.	Carlisle.	R. 3	Weir, S. D	Sullivan	R. D
Lisman, J. W.	Buell City	R. D	Whalen, D. M	Carlisle.	R. 10
Lisman, W. A	Carlisle.	R. D	Young, J. M	Carlisle.	R. D
Lisman, S. J	New Lebanon	R. D			

Regular, 37; Homeopathic, 2; Eclectic, 2.

Switzerland County.

Name..	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Cheever, E. M	Quercus Grove	R. 10	Olcott, W. A	Patriot	R. D
Clarke, R. E	Mt. Sterling	R. D	Rons, H. C	Vevay	R. D
Copeland, R. M.	Bennington	R. D	Sage, P. S.	Vevay	R. 10
CRAIG, ALBERT G.	Vevay	R. D	Shadday, J. H	Vevay	R. D
Culbertson, Scott.	Moorefield	R. D	Simpson, R. G	Markland.	R. D
Dalgleish, H. T.	Vevay	R. D	Smith, J. W.	Vevay	H. D
Elfers, John	Sugar Branch	R. D	Vanosdol, C. L	Allensville	R. D
Jamison, R. A	Patriot	R. D	Vanosdol, J. W.	Allensville	R. D
Langsdale, J. M. W.	Florence	R. D	VanPelt, G. W	Vevay	R. D
McMillen, Wm	Sugar Branch	R. 10			

Regular, 18; Homeopathic, 1.

Tippecanoe County.

Abbott, Abner	Lafayette.	E. D	Motter, Thos. S.	Lafayette.	R. 10
Ackerman, August C.	Lafayette.	H. D	Nesbit, Wm. S	Monitor	R. D
Anderson, Joseph H	Colburn.	R. D	O'Ferrall, Rob't M.	Lafayette.	R. D
Barcus, Paul	Odell	R. D	Ogborn, Job O	Lafayette.	E. 10
Baker, Joseph H	Stockwell.	R. D	Orth, Wm. M	Lafayette.	R. D
Baugh, Samuel L.	Farmers' Inst	R. D	Peters, W. H	Lafayette.	R. D
Beasley, Geo. F	Lafayette.	R. D	Potel, Christian	Lafayette.	R. D
Boyd, B. H	Lafayette.	R. D	Powers, E. D	Lafayette.	R. D
Brown, W. C	Buck Creek.	R. D	Pyke, A. D	Romney	R. D
Campbell, W. S.	West Point	R. D	Rainey, H. W	Lafayette.	R. D
Charles, Robert E	West Point	R. 10	Riddle, H. D	Battle Ground	R. 10
Charter, John H	Lafayette.	R. D	Robinson, Rob't D	Colburn	R. D
Crider, Geo. W	Buck Creek.	R. D	Schaible, Emil	Lafayette.	R. D
Crouse, J. H	Dayton	R. D	Seawright, S. R.	Lafayette.	R. D
Dienhart, Michael	No. 10.	R. 10	Shill C. W	Lafayette.	R. D
Dunbar, James	Battle Ground	R. 10	Simison, John	Romney	R. 10
Fickel, J. M	Stockwell.	E. D	Simison, J. F	Romney	R. D
Fox, Stiles R	Lafayette.	R. 3	Smith, J. M.	Lafayette.	H. D
Goldsberry, S. S	Montmorenci.	R. D	Snow, W. D.	Lafayette.	E. 10
Harbaugh, C. A.	Battle Ground	R. D	Snyder, Leander	Lafayette.	R. 10
Hill, Wm. H	Dayton	R. D	Spaulding, Joseph	West Lafayette.	R. D
Hiner, F. T.	West Lafayette.	R. D	Swisher, Francis W	Clark's Hill	P.-M. D
Hopper, Milton S.	Lafayette.	R. D	Tea, Roger S	Battle Ground	R. D
Hunt, Benham	Elston	E. D	THROCKMORTON, G. K	Lafayette	R. D
Hupe, Carl	Lafayette.	R. D	Todd, W. E.	West Lafayette.	E. D
Ingersoll, B. F	Lafayette.	R. D	Vinnedge, W. W	Lafayette.	R. D
Ingersoll, J. M	Lafayette.	R. D	Walker, Wm. S	Lafayette.	R. D
Irwin, Luther M	Lafayette.	R. D	Washburn, G. W	Lafayette.	E. D
Jones, Mary L	West Lafayette.	R. D	Washburn, S. S.	Lafayette.	R. D
Keifer, C. B.	Lafayette.	R. D	Webster, J. C	Lafayette.	R. D
Kirkpatrick, Geo. W	Culver Station	R. 10	Wells, Albert A.	Lafayette.	R. D
Koonse, Jeremiah P	Lafayette.	E. 10	Wetherill, R. B.	Lafayette.	R. D
Labaree, William	Clark's Hill	R. 3	Yeager, J. Wm	Odell	R. D
Littell, John V	Lafayette.	R. D	Yeakel, David T	Lafayette.	R. D
Mace, Wm. D.	Lafayette.	R D	Yount, Silas T	Lafayette.	R. D
Moffit, Wm. R	West Lafayette.	R. D			

Regular, 60; Eclectic, 8; Homœopathic, 2; Physio-Medical, 1.

Tipton County.

Armfield, Tilmond O.	Tipton	R. D	Lindsay, Jas. P	Sharpsville.	R. 10
Austin, Winser.	Windfall	R. 10	Louder, Wm. L.	Jackson	R D
Cooper, Geo. M.	Tipton	R. D	McCreary, Oliver P.	Nevada.	R. 3
Cooper, John	Groomsville	P.-M. D	Newcomer, M. B. V	Tipton	R. D
Doan, Nathan W.	New Lancaster.	R. 10	Pitzer, A. B.	Tipton	R. D
DICKEY, A. S.	Tipton	R. D	Repp, Geo. R	Goldsmith	R. 3
Downing, Samuel G	Hobbs	R. D	Rubush, D. P	Sharpsville.	R. 3
Glass, Wm. M	Tipton	R. D	Read, Horace G	Tipton	R. D
Grove, Jasper M	Tipton	R. 10	Ross, L. N	Ekin	E. 10
Gossett, Lucy.	Kempton	E. D	Rhoads, Anna E	Tipton	R. 10
Green, Wm. A	Kempton	R. 3	Stepenson, Jos. A	Kempton	R. 10
Heath, Wm. N	Sharpsville.	R. 3	Spitzmesser, Jno. L	Windfall	E. 10
Hilldrup, J. R	Windfall	P.-M. D	Somers, Jas. A	Groomsville	R. 10
Huron, Willis B	Tipton	H. D	Vickrey, M. V. B	Tipton	R. D
Howe, Louis	Tipton	R. D	Whetchell, Thos. C.	Goldsmith	R. 3
Jessup, John T	Curtisville	R. D	Wood, George C	Windfall	R. D
Johns, William D	Groomsville	P.-M. D	Zeek, Farlon S	Windfall	R. 10
King, Frank B	Windfall	R. D			

Regular, 28; Eclectic, 3; Homœopathic, 1; Physio-Medical, 3.

Union County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Fosdick, A. C.	Liberty	R D	Pigman, G	Liberty	R D
Gardner, Jesse	Brownsville.	E D	Shriver, W. W	Liberty	E 10
Hawley, A. D.	College Corner	R 10	Seigler, Geo	Liberty	R D
Hawley, W. H	College Corner	R D	Smith, J. A	Brownsville.	R D
Hendricks, J. L	Liberty	— 10	Sumpter, J. R	College Corner	— 10
Kell, S. D.	Liberty	R 10	THOMPSON, E. C	Liberty	H D
Moore, H. A	Liberty	R D	Williams, O. N	Lotus	H 10
Morris, J. E	Liberty	R D			

Regular, 9; Eclectic, 2; Homeopathic, 2; not reported, 2.

Vanderburgh County.

Achilles, F. W	Evansville	R. D	Linthicum, Edward	Evansville	R. D
Allen, L. R	Evansville	R. 3	Macher, Thomas	Evansville	E. D
Alexander, Wm	Evansville	R. 3	Maghee, Wm. H	Evansville	R. D
Allison, James	Evansville	R. D	Mason, Chas. H	Evansville	R. D
Armistead, R. A	Evansville	R. D	McKlurkin, J. C	Evansville	R. D
Bacon, C. P	Evansville	R. D	McKlurkin, John	Evansville	R. D
Bartenwerffer, O. A	Evansville	R. D	McCoy, B. F	Evansville	R. D
Begley, B. W	Evansville	R. D	McCoy, P. Y	Evansville	R. D
Bennett, A. T	Evansville	R. D	McMahon, C. Agnes	Evansville	R. D
Binkley, J. P	Evansville	R. D	Moore, D. A	Evansville	R. 3
Bray, M. J	Evansville	R. D	Mountonnex, C. G. R.		R. D
Brose, L. D	Evansville	R. D	Mühlhausen, M	Evansville	R. D
Bryan, A. H	Evansville	R. D	Owen, A. M	Evansville	R. D
Bryan, Tony	Evansville	R. D	Owen, John E	Evansville	R. D
Caldwell, Matilda	Evansville	N. R. 10	Ocklman, C. L		R. D
Carter, E. L	Evansville	R D	Ottman, P	Evansville	R. D
Clippinger, W. F		R. D	Penington, J. J	Evansville	R. D
Compton, J. W	Evansville	R. D	Pirnot, John	Evansville	R. D
Compton, Fred	Evansville	R. D	Pollard, Wm. S	Evansville	R. D
Corlew, R. M	Evansville	R. D	Powell, T. E	Evansville	R. D
Cosby, G. P	Evansville	R. D	Pritchett, W. S	Evansville	R. D
Couden, Wm. C	Evansville	H. D	Ralston, W. G	Evansville	R. D
Davis, F. L	Evansville	H. D	Reavis, W. J	Evansville	R. D
Day, B. J	Evansville	R. D	Rose, W. B	Evansville	R. D
Dixon, H. T	Evansville	R. D	Ruark, Thos. H		R. D
Dow, John L	Evansville	R. D	Rucker, Thos. H	Evansville	R. D
Doyle, John	Evansville	E. D	Sawyer, F. W	Evansville	R. D
Dubois, J. N	Evansville	H. D	Shultz, Theodore	Evansville	H. 10
Failing, Walter	Evansville	R. 10	Schuyler, P. L	Evansville	R. D
Fritsch, Ludwig	Evansville	R. 10	Sieffert, A. H. H	Evansville	R. D
Fritsch, Wm. A	Evansville	R. D	Snyder, Catherine S	Evansville	R. D
Gilbert, George	Evansville	R. 10	Spencer, E	Evansville	R. 10
Gilbert, Wm. H	Evansville	R. D	Sniter, Wilhelmina	Evansville	R. 10
Glover, John F	Evansville	R. D	Taylor, T. H	Evansville	H. D
Graham, J. J	Evansville	E. 10	Tyrell, C. C	Evansville	H. D
Green, W. S	Evansville	R. 3	Tillman, M	Evansville	R. 10
Gumber, C. H	Evansville	R. D	Varner, Geo. W	Evansville	R. D
Gumberts, Simon	Evansville	R. 10	Viche, Caspar H	Evansville	R. D
Hartloff, Richard	Evansville	R. D	Vitzdomm, W	Evansville	R. D
Hayden, A. M	Evansville	R. D	Walker, Edwin	Evansville	R. D
Heim, L. C	Evansville	R. D	Walters, H. J		R. D
Herr, L. S	Evansville	H. D	Watkins, R. B	Evansville	R. D
Hodson, George	Evansville	R. D	Weever, J. B	Evansville	R. D
Hooker, H. H		R. 10	Wilde, O. E	Evansville	R. 10
Hayhurst, A. S	Evansville	R. 10	Williams, Floyd	Evansville	R. D
Henderson, S. C	Evansville	R. D	Williams, Thos. F	Evansville	E. D
Illing, A. F	Evansville	R. 10	Wilton, Josiah	Evansville	R. D
JACOBSOHN, JOS	Evansville	R. D	Worsham, L	Evansville	R. D
Kerth, J. H	Evansville	R. D	Witting, A. P	Evansville	R. D
Knapp, Chas	Evansville	R. D	Weber, William	Evansville	R. 10
Laval, William J	Evansville	R. 10	Younk, G. M	Evansville	R. D

Regular, 90; Eclectic, 4; Homeopathic, 6; not reported, 1.

Vermillion County.

Name.	*Post Office.*	*School.*		*Name.*	*Post Office.*	*School.*	
Bogart, John H.	Clinton	R.	D	McNoil, Geo. H.	Perrysville	R.	10
Barnes, James A	Gessie	R.	D	Morton, W. C. P	Hillsdale	R.	10
HALL, M. L	Newport	R.	D	Nebeker, Henry	Clinton	R.	D
Hall, W. T	Gessie	R.	D	Newton, G. O.	Dana	R.	D
Harrison, John C.	Hillsdale	E.	10	Patterson, W. P	Toronto.	R.	3
Hood, Thos. C	Dana	R.	D	Price, Wm. S	St. Bernice	R.	D
Johnson, David B	Perrysville	R.	10	Shepard, Hiram	Dana	R.	D
Keyes, Otis M	Dana	R.	D	Shepard, Lewis.	Newport	R.	D
Kinderman, Alex	Eugene	R.	D	Smith, Elmer M	Cayuga	R.	D
Lonsdale, Thos. N	St. Bernice	R.	D	White. Chas. M.	Clinton	R.	D
Loomis, E. C	Perrysville	R.	3	Wallace, James.	Newport	R.	D
Mack, Erastus	Hillsdale	E.	10	Webb, Jas. B	Perrysville	R.	10

Regular, 22; Eclectic, 2.

Vigo County.

Name.	*Post Office.*	*School.*		*Name.*	*Post Office.*	*School.*	
Armstrong, Wm. P.	Terre Haute	R.	D	Link, John E.	Terre Haute	R.	D
Askern, Cort F	Terre Haute	R.	D	Leachman, James S	Burnett.	R.	D
Allen, James L.	Terre Haute	H.	D	Lloyd, Thos. A	Prairieton	R.	D
Austin, Hannah H	Terre Haute	R.	3	Melton, Seth B	Burnett	R.	3
Brunker, James W	Riley P. O	R.	D	Moorehead, Thos. W	Terre Haute	R.	D
Baldridge, John H	Terre Haute	E.	D	Mattox, W. R.	Youngstown	R.	D
Ball, Lawrence S	Prairieton	E.	D	Morgan, John H	New Goshen	R.	D
Bennett, Stephen M	New Goshen	E.	D	Moore, Wilmot	Terre Haute	H.	D
Brown, Theodore F.	Sandford	R.	10	Moore, James A	Prairie Creek.	R.	D
Belt, Richard.	Sandford	E.	D	Mann, Henry D	Terre Haute	R.	D
Ball, Cuttler	Terre Haute	R.	D	Marlow, Austin	Terre Haute	E.	10
Bates, Christopher	Terre Haute	R.	D	Mason, John C	Terre Haute	R.	D
Brock, Leonides G	Fontanet	R.	D	Mutz, Chas, M	Terre Haute	R.	D
Bruilette, Samuel L	Lewis P. O	R.	D	Mattison, Fitch C, E	Terre Haute	R.	D
Baker, Will.	Terre Haute	H.	D	McCorkle, Thos. H	Ellsworth	R.	D
Crowley, Thomas N.	Terre Haute	R.	D	McLaughlin, James	Seeleyville	R.	D
Crapo, Geo. W	Terre Haute	R.	D	McClain, Leslie	Terre Haute	R.	D
Crapo, John R	Terre Haute	R.	D	McJohnston, A. D	Pimento	R.	D
Collins, Wm. O.	Pimento	R.	D	McCain, Thos. J	Terre Haute	—	D
Carson. Lewis E	Prairieton	R.	D	Nebergall, Jas. W	Prairie Creek.	R.	10
Caldwell, Henry H	Terre Haute	E.	10	Ogle, Jacob W	Prairieton	R.	D
Casto, Jabez C	Terre Haute	R.	D	Preston, Samuel C	Terre Haute	R.	D
Cole, Willis H	Terre Haute	R.	D	Pike, Lyman	Terre Haute	E.	10
Caddle, Wm. J	Terre Haute	E.	10	Pence, Allen	Terre Haute	E.	10
Carson, Julian C	Middletown	R.	3	Pinson, Andrew J	New Goshen	R.	D
Cavins, Riley W	Terre Haute	R.	D	Poindexter, John.	Nelson	R.	D
Cox, David	Terre Haute	R.	D	Patmore, John S	Terre Haute	E.	10
Dooly, Rufus L.	Atherton	R.	3	Price, Wm. S	Atherton	R.	3
Dolson, James B	Pimento	R.	10	Pinson, James A	New Goshen	R.	D
Drake, Thomas G	Terre Haute	R.	D	Roberts, Wm. H	Terre Haute	R.	D
Davis, John W	Pimento	R.	D	Richardson, Sam'l C	Terre Haute.	P.-M.	D
Drakes, James F	Prairieton	R.	D	Russell, Charles W.	Riley	R.	D
Dinton, Margeret E	Pierson Tp	?	10	Rice, Spencer M	Terre Haute	R.	D
Dowell, Solomon	Middletown	E.	10	Swafford, Benj. F.	Terre Haute	R.	D
Davis, Floyd M.	Terre Haute	R.	D	Spain, Archibald W	Terre Haute	R.	D
Elder, Wm. R	Terre Haute	H.	D	Shaley, Fred. W	Terre Haute	R.	D
Erchelberger, Wm. C.	Terre Haute	R.	D	Stunkard, Thomas C	Terre Haute	R.	D
Everett, Geo. H.	Terre Haute	R.	D	Swap, John H	Sandford	R.	10
Erskine, Amos C	Terre Haute	R.	D	Shickel, John T	Terre Haute	R.	10
Forcythe, Mary.	Terre Haute	R.	D	Stark, Wm. I.	Fontanet	H.	D
Gertsmeyer, C. P	Terre Haute	R.	D	Stock, Lewis	Lewis P. O	E.	D
Glover, Elmer E	Terre Haute	R.	D	Standacker, Albert.	Terre Haute	R.	3
Given, Charles C	Lewis P. O	R.	D	Spottswood, E. T	Terre Haute	R.	D
Graham, Franklin B	Farmersburg	R.	10	Schell, Walker	Terre Haute	R.	D
Gilmore, Andrew H	Terre Haute	E.	3	Treat, Horace T	Terre Haute.	P.-M.	D
Griffith, Lewis C	Lockport	R.	D	Tomlin, Ben	Terre Haute	R.	D
Hartley, Hiram	Terre Haute	R.	D	Thompson, J. C.	Terre Haute	R.	D
Hickman, Cornelius	Fontanet	R.	D	Thompson, M. H	Prairie Cr'k P.O.	R.	D
Hyde, John.	Terre Haute	H.	3	Talbott, John M	Prairie Cr'k P.O.	R.	10
Hanes, David.	Terre Haute	E.	10	Willien, Leon J	Terre Haute	R.	D
Haworth, W. W	Terre Haute	R.	D	Waters, Moses H	Terre Haute	H.	D
Hendrick, H. W	Terre Haute	E.	D	WEINSTEIN, L. J.	Terre Haute	R.	D
Hunt, John S.	Maxville	R.	D	Watkins, Samuel.	Ellsworth.	R.	D
Hunt, Stephen	Terre Haute	R.	D	Worrell, J. P	Terre Haute	R.	D
Huff, John H	Sandford	R.	10	Wilson, A. L. Moore	Terre Haute	H.	D
Hinkle, James S	Terre Haute	R.	D	Williamson, John W	Terre Haute	E.	D
Jenkins, Wilbur O	Terre Haute	R.	D	Willis, Stephen B	Terre Haute	E.	10
Kennedy, Thos. W	Lewis P. O	R.	D	Willis, James R	Terre Haute	R.	D
Langhead, James T	Terre Haute	R.	D	Walters, Jacob A.	Terre Haute	R.	D
Littlejohn, Henry C	Riley P. O	R.	D	Young, Stephen A	Terre Haute	R.	D
Larkins, Edgar L	Terre Haute	R.	D	Zimmerman, C. F	Terre Haute	R.	D

Regular, 93; Eclectic, 16; Homeopathic, 8; Physio-Medical, 2.

Wabash County.

Name.	*Post Office.*	*School.*
Ader, Henry	Somerset	R. D
Blount, Rufus F	Wabash.	R. D
Biggerstaff, Jas. T	Largo.	R. D
Broadbeck, Gus. H.	Roann	R. D
Brady, Thompson R	Wabash	R. D
Brady, C. C	Lincolnville	R. D
Bloomer, Frank H	Lagro.	R. D
Bricker, Wm	Lincolnville	R. D
Dicken, Jas. K	Lafontaine	R. D
Dicken, Constantin L	Lafontaine	R. D
Donaldson, E. F	Wabash.	R. D
Dunn, Wesley A	Wabash.	H D
Ellis, Chas. S	Wabash.	R. D
FORD, J. H.	Wabash.	R. D
Ginther, David	N. Manchester	E. D
Gasharn, David A	N. Manchester	R. D
Hale, Marcus M	Wabash.	R. D
Hale, Norman	Wabash.	E. D
Hubbard, Elias.	N. Manchester	R. D
Jessup, Louisa	Wabash.	R. D
Kidd, Gideon P.	Roann	R. D
Kautz, John	Lagro.	R. D
King, Clifford H	Rich Valley	R. D
Lower, Melville O	N. Manchester	R. D
Lancaster, Thos. A	N. Manchester	R. D
Minnick, Horace	Treaty	R. D
Mooney, Henry C.	Laketon	R. D
Modrecker, John M	Wabash.	R. D
Moore, Perry G.	Wabash.	R. D
Miesner, Harry E	Servia	R. D
Martin, Henry E	Urbana	R. D
McGrew, W. H	Lafontaine	E. D
Richards, John	Dora	R. D
Renner, John H	Lagro.	R. D
Renner, Emanuel	Lagro.	R. D
Smith, Andrew J	Wabash.	R. D
Stradley, Daniel	Wabash.	R. D
Studley, Joseph	Lafontaine	R. D
Shaffer, Phillip	N. Manchester	R. D
Shelhammer, D. C	Puckerbrush	R. D
Thomas, A. McD	Lafontaine	R. D
Tresh, Phillip.	Liberty Mills.	R. D
Wells, Wm	Laketon	R. D
Winton, Horace	N. Manchester	R. D

Regular, 39; Eclectic, 4; Homœpathic, 1.

Warren County.

Campbell, Thomas B.	West Lebanon	R. D
DeHART, JACOB	Williamsport.	R. D
Fenton, Samuel C	Pine Village	R. D
Fleming, Jackson	West Lebanon	R. 10
Hoffman, Charles H	Rainsville	R. D
McMullen, James W	Pine Village	R. 3
Osborn, Squire N.	Williamsport.	R. D
Purviance, Wm. E	West Lebanon	R. D
Rosebury, Isaac A	Independence	R. 10
Swank, Leroy.	Williamsport.	R. D
Simpkins, Robert J	Williamsport.	R. 10
Stewart, John C	Marshfield	R. D
Trent, John H	Marshfield	R. 10
Vick, Wm. B	Green Hill	E. D
Watson, James R.	West Lebanon	R. D

Regular, 14; Eclectic, 1.

Warrick County.

Beeler, Jerome S	Boonville.	E. D
Brown, A. P	Heilman	R. 3
Baldwin, I. J	Lynnville.	R. D
Bradley, John H	Folsomville	E. 10
Brown, Lee.	Heilman	R. D
Camp, George H	Lynnville.	E. 10
Camp, Joseph W	Lynnville.	E. 10
Camp, W. O.	Dickeyville.	E. 10
Camp, W. F.	Lynnville.	E. 3
Daily, T. G	Boonville.	R. 10
DeForrest, D. A	DeForrest.	R. D
Grim, Simon	Wheatonville.	R. D
HOWARD, T. M	Boonville.	R. D
Hewens, W. A	Chandler	R. D
Hunt, W. A.	Lynnville.	R. 10
Hedden, G. J	Selvin.	R. 10
Hammel, John	Lynn	R. D
Hoover, P. N	Boonville.	R. D
Honeycutt, W. J	Ditney	R. 3
Hart, E. H	Tennyson.	R. 3
Jones, T. B	Lynnville.	R. D
Keegan, C. J	Canal	R. D
Keifer, Charles	Newburgh	R. 10
Lake, George	Newburgh	R. D
Morganheimer, P.	Elberfield.	R. D
Mills, W. Henry	Folsomville.	R. D
McCoy, T. J.	Eby	R. 10
McVey, W. H.	De Gonia	R. 10
McCoal, H. T.	Chandler	R. D
Newton, J. A	Boonville.	H. 10
Quiatt, Allison	Tennyson.	R. 10
Rhodes, R. R	Yankeetown	H. D
Scales, W. B	Boonville.	R. D
Shaul, M	Boonville.	R. D
Smith, Thomas	Canal	R. D
Slaughter, W. W	Newburgh	R. D
Scales, T. D.	Boonville.	R. D
Temple, W. R.	Selvin.	R. 10
Tyner, S. L	Chandler	R. D
Tillman, J. R.	Newburgh	R. D
Thompson, P. S.	Newburgh	R. D
Tucker, D. W.	Tennyson.	R. D
West, E. A	Folsomville.	R. 10
Wilson, Wesley	Yankeetown	R. D
Watson, W. D.	Tennyson.	R. 10
Walden, W. M	Newburgh	R. D
Zimmerman, J	Lynnville	R. D

Regular, 39; Eclectic, 6; Homœopathic, 2.

Washington County.

Applegate, George	South Boston	R. 10
Baker, T. H. B	Pekin	R. D
Barnett, J. T	Hardinsburg	R. D
Bright, W. H	Martinsburg	R. D
Bradshaw, A. E.	Halo	R. D
Bare, John R	Salem.	R. D
Duff, S. W.	Salem	R. D
Deweese, G. W	Fredricksburg	R. 10
Doolittle, J. H	Campbellsburg.	R. D
Ferree, Isaac	Livonia	R. D
Hudson, L. H.	Little York	E. D
Howard, S. B.	Kossuth	R. 3
Hancock, G. S.	Campbellsburg.	R. D
Herron, T. W.	Lesterville	R. 10
Hobbs, H. C.	Salem	E. D
Hoggatt, M. L.	Salem	E. 10

Washington County—Continued.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Henderson, H. D	Salem	R. D	Overman, W. M.	Salem	P.-M. D
Henderson, James P.	Salem	R. D	Paynter, C. L.	Salem	R. D
Lockhart, Thomas	Campbellsburg	E. 3	Purkhiser, W. J.	Salem	R. D
Layman, J. H.	Chestnut Hill	R. 10	Rathburn, Charley	Salem	R. 10
MURPHEY, C. W.	Salem	R. D	Roberts, Sam A.	Fredricksburg	R. D
Maxedon, R. W.	Hardinsburg	R. D	Spurgeon, A. N.	South Boston	R. D
Martin, R. W	Salem	R. D	Schoonover, W. S.	Hardinsburg	R. 10
McPheeters, J. S	Hardinsburg	R. D	Tucker, Thomas M.	Salem	R. D
Martin, W. H.	Campbellsburg	R. 10	Tucker, W. W.	Little York	R. D
Neyman, E. M. C.	Saltilloville	R. 10	Voyles, V. A.	Livonia	R. 3
Oatley, J. H.	N. Philadelphia	R. 10	Wier, A. G.	Kossuth	R. D
Overman, E. T	Salem	P.-M. D	Wilson, R. J.	Salem	R. D

Regular, 34 ; Eclectic, 4 ; Physio-Medical, 2.

Wayne County.

Allen, John B	Hagerstown	R. D	La Fevre, E. B	Richmond	R. D
Beam, Alfred H	Williamsburg	P.-M. D	Luken, C. H	Richmond	R. D
Broadwell, Wilmer.	Cambridge City	R. D	Lewis, J. V	Richmond	H. D
Boyd, H. B	Cambridge City	R. D	Lowe, G. N	Hagerstown	N. R. D
Bond, Chas. S.	Richmond	R. D	Mauk, J. R	Cambr'ge City	R. D
Ballenger, W. L	Richmond	R. D	Modlin, Leander H.	Nettle Creek	R. D
Benham, H. C	Richmond	E. D	McTaggart, O. R	Dublin	E. D
Ballard, N. H	Richmond	R. D	McClelland, J. S	Dublin	E. D
Bappart, A	Richmond	R. 10	Mann, Leonidas S	Dublin	H. D
Balcom, Lafayette	Richmond	R. D	Meek, Joseph B.	Webster	R. 10
Bulla, J. M	Richmond	H. D	Mendenhall, W. O	Richmond	R. D
Buntin, E. A	Greensfork	R. D	Morrow, Sarah J	Richmond	R. 3
Baldwin, Geo. C	Dalton	N. R. 3	Murray, Nancy J.	Richmond	N. R. 3
Carr, O. C.	Boston	E. D	McDivitt, E. G	Richmond	H. D
Colburn, C. P	Richmond	R. D	McSimpson, John	Richmond	E. D
Canaday, N. F	Hagerstown	H. D	McCormack, Wm. D	Richmond	P.M. D
Clark, J. M	Economy	R. D	Neff, W. W	Greensfork	R. 3
Carpenter, D. L.	Camb'ge City	N. R. 10	Pitman, Henderson	Hagerstown	R. 3
Dempsey, Wm. S	Richmond	R. D	Quick, J. C	Hagerstown	P.M. D
Dwiggins, M. F	Richmond	R. D	Rife, J. J	Boston	R. D
Davis, T. H	Richmond	H. D	Rutledge, J. W	Cambridge City	R. D
Emmons, Joshua	Richmond	H. D	Rusk, Anna P	Richmond	P.M. D
Fisher, A. W	Richmond	P.-M. D	Robbins, G. W	Richmond	R. D
Gordon, G. C	Centreville	R. 10	Reynolds, Margeret J.	Richmond	H. D
Gabel, Harrison	Centreville	R. D	Robertson, Clara S	Richmond	R. D
Gresvenor, E. B	Richmond	H. D	Reed, Wilson	Centerville	N. R. D
Green, Frank D	Richmond	R. D	Study, J. N	Cambridge City	R. D
Griffis, W. T	Whitewater	E. D	Spence, Jesse A.	Richmond	R. D
Graham, Wm. B	Whitewater	E. 3	Shinner, Chester H.	Richmond	H. D
Hubbard, Wm. H.	Dublin	E. D	Sweeny, I. F	Milton	R. D
Hale, Thomas T	Dublin	E. D	Summers, J. B	Milton	R. D
Helm, Wm. M	Williamsburg	E. D	St. Clair, J. W.	Milton	R. 10
HIBBERD, JAS. F.	Richmond	R. D	Swallow, J. E.	Abington	R. D
Harold, E. N	Richmond	P.-M. D	Shoff, J. S.	E. Germantown	R. D
Hobbs, M. W	Richmond	R. D	Schiltneck, V. G	Hagerstown	R. D
Howells, Joseph	Richmond	H. D	Tillson, Hosea	Centerville	R. 10
Hadley, Edwin	Richmond	R. 10	Taylor, L. B	Dublin	R. 10
Haynes, M. H.	Richmond	R. D	Thurston, E. H	Hagerstown	P.M. 10
Hopkins, Robert R	Richmond	R. D	Taylor, L. P.	Williamsburg	P.M. D
Harris, J. I	Fountain City	R. D	Taylor, James E	Richmond	R. D
Harter, Wm. W.	Hagerstown	P.-M. D	Teague, Isaac C.	Richmond	H. 10
Johnson, W. A	Chester	E. D	Thurston, J. M	Richmond	P.M. D
Johnson, L. C	Fountain City	R. D	Taylor, T. W	Fountain City	R. D
Jay, W. C.	Richmond	E. D	Watts, E. K.	Richmond	R. D
Johnson, M. F	Richmond	R. D	Wampler, J. M	Richmond	R. 3
King, Wm. F	Centerville	R. D	Weist, J. R	Richmond	R. D
Kersey, S. H	Centerville	R. D	Williams, Edmund.	Richmond	R. D
Kinsey, J. H	Richmond	P.-M. D	Wright, Jacob E	Cambridge City	H. D
King, J. E	Richmond	R. D	Wright, I. E.	Hagerstown	E. D
Kersey, C. A	Richmond	R. D	Witmer, B. M.	Milton	E. 10
Kelsey, L. S.	Richmond	R. D	Wray, Hardy	Dublin	E. 10
Loar, Apollos.	Richmond	P.-M. D	Wray, Hiram B	Dublin	E. D
Lorimor, John H. O	Richmond	R. D	Zimmerman, Wm.	Richmond	H. D

Regular, 60; Eclectic, 16; Homeopathic, 14; Physio-Medical, 12; not reported, 5.

Wells County.

Name.	*Post Office.*	*School.*	*Name.*	*Post Office.*	*School.*
Bugh, John W	Bluffton	R. D	Metts, J. I.	Ossian	R. 10
Cassel, G. W	Keystone	R. 10	Metts, A. H.	Ossian	R. D
COOK, L. H.	Bluffton	R. D	Morris, T	Mt. Zion	R. D
Conner, J. L.	Keystone	P.-M. D	Maddox, L. E.	Montpelier	R. D
Doster, H.	Poneto	R. D	Mickey, H. P	Keystone	R. D
Davenport, E. P.	Craigville	R. 3	Murray, T. E	Zanesville	R. D
English, C. H.	Uniondale	R. D	Neff, I.	Mount Zion	R. 10
Fitzpatrick, J. D	Vera Cruz	R. 10	Newman, M. A	Ossian	R. D
Fulton, G. E	Bluffton	R. D	Noble, H. Z.	Zanesville	R. D
Fulton, J. C.	Bluffton	R. 10	Ransom, J. A.	Barber's Mills	R. D
Goodin, S. A	Nottingham	R. 10	Spaulding, L. A.	Bluffton	R. D
Garrett, F. W.	Liberty Center	R. D	Springstead, A. E.	Bluffton	H. D
Horton, E. R	Bluffton	E. D	Waldron, R. A	Nettingham	R. 10
Horton, T.	Bluffton	R. 10	Walser, John A.	Lenn Grove	R. 3
Hatfield, I. N.	Bluffton	R. D	Weer, H. H.	Bluffton	E. D
Mason, L	Bluffton	R. D			

Regular, 27; Eclectic, 2; Homeopathic, 1; Physio-Medical, 1.

White County.

Ballou, A. B	Burnett's Creek	R. D	Noland, J. W	Buffalo	R. D
Baugh, W. B	Chalmers	R. D	Robison, F. B	Monticello	E. D
Clark, R. J	Monticello	R. D	Ramsey, J. P	Wolcott	R. D
Carr, J. L	Monon	R. D	Reed, J. H	Idaville	R. D
Clayton, G. R	Monon	R. D	Small, H. E	Monticello	E. D
Cooper, W. B	Monticello	R. D	Sluyter, S. D	Reynolds	E. 3
Cowger, S. R	Monticello	E. D	Sampson, W. H	Brookston	E. 10
Didlake, M. T	Monticello	R. D	Smith, J. T	Brookston	R. D
Delzell, R. M	Reynolds	R. 10	Stallard, J. S	Chalmers	R. D
Henry, L. W	Burnett's Creek	R. 10	Scott, Caleb	Monticello	P.-M. 10
Huey, R. B	Headley	R. D	Spencer, Wm	Monticello	R. D
Kelley, D. M	Brookston	R. D	Snodgrass, S. J	Monticello	P.-M. D
McAllister, J. W	Idaville	R. 3	Trowbridge, W. V	Burnett's Creek	R. D
Medarius, John	Brookston	R. 10	Welte, Isadore	Monticello	H. 10
McCANN, J. D	Monticello	E. D			

Regular, 20; Eclectic, 6; Homeopathic, 1; Physio-Medical, 2.

Whitley County.

Amerman, S. D.	Columbia City	H. 10	LaFollette, T. J	South Whitley	R. D
Creswell, John F	Churubusco	R. D	Merriman, Elijah	South Whitley	R. D
Coyle, Wm. Henry	Hecla	R. D	Mayers, Francis M	Churubusco	R. D
Eberhardt, Eli L	South Whitley	R. D	Richards, John.	Laud	R. D
Greisner, Fred G	Collins	R. D	Schuman, Oliver V.	Columbia City	R. D
Geary, John W	Coesse	R. D	Scott, J. Wm. C.	Hecla	R. D
Goheen, Charles M.	Churubusco	R. D	Souder, Christopher	Larwill	R. D
Houtz, Wm. C	Columbia City	R. D	Squires, James W	Churubusco	R. D
Ireland, Martin	Columbia City	R. D	Weber, William	Columbia City	R. D
Kithcart, Nathan L	Columbia City	R. D	Williams, Chas. S	Columbia City	R. 10
Kirkpatrick, Daniel	Larwill	R. D	WEBSTER, D. E.	Columbia City	R. D
Lawrence, L. E.	Columbia City	R. D	Wenger, Noah R	Coesse	R. D
Linvill, David G	Columbia City	R. D	White, Samuel R	Laud	R. D
Linvill, David S	Columbia City	R. D			

Regular, 26; Homœopathic, 1.

RECAPITULATION.

Regulars	3,269
Eclectics	469
Homœopathics	201
Physio-Medicals	146
Not reported	116
Total	4,201

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